

THE POCKET BOOK OF "HOME CANNING"

ELIZABETH BEVERIDGE
and the Home Service Center of the
WOMAN'S HOME COMPANION



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T H E P R I N T I N G H I S T O R Y O

The Pocket Book of Home Canning

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CONTENTS

| <i>Chapter</i> | <i>Page</i> |
|--|-------------|
| Larders of Plenty and How to Make Them Grow | vii |
| Dictionary of Terms in Common Use | ix |
| . You Look Facts in the Eye | 1 |
| And ponder the hows and whys of being a squirrel | |
| . You Decide to Can | 13 |
| Food comes out of a jar no better than it goes in | |
| . Bring On Your Fruits—and Tomatoes | 21 |
| Lots for a little and it's easier than you might think | |
| . Accent on Accuracy | 43 |
| You and your pressure cooker become pals for life | |
| . The Whole Jam Family | 59 |
| Or the masterly manipulation of your sugar ration | |
| . With Vinegar, Spice and Salt | 85 |
| You lay down a barrage against future monotony | |

| <i>Chapter</i> | <i>Page</i> |
|---|-------------|
| 7. They Dig In For the Winter | 99 |
| Snug as anything in pit, ground and cellar the hardy vegetables wait your call | |
| 8. The Fine Art of Drying | 109 |
| With heat and patience the moisture comes out and the goodness stays in | |
| 9. Why Foods Leave Home | 129 |
| They take a trip to the froster and drop in on the neighborhood canning bee | |
| Index | 133 |



LARDERS OF PLENTY AND HOW TO MAKE THEM GROW

This is a book about building up a food reserve in your home. It tells you how to convert the summer's surplus from garden, field and orchard into a substantial wartime larder; it describes the many ways in which you can do it with your own two hands.

If you are an amateur your doubts and fears will vanish as you study its pages. You'll discover with glee how easily you can put your finger on what you want when you want it. Because its rules are based on scientists' findings backed up by the experience of practical homemakers you'll not come across a single mystery to trip you up. You, a novice, can begin today to make a few glasses of jelly, to can tomatoes, to dry some apples or peaches. The only caution you need is to work with small amounts until you have gained skill and confidence.

But perhaps you graduated from the amateur class long ago and joined the group of women who specialize on a

few heirloom recipes to the unending delight of their family and friends. Then I hope this little book will help to carry you over the hurdles of a real food conservation program. Keep it in your kitchen from the beginning of the berry season to the first snowfall when the last speck of food that can possibly be saved is out of the way.

Even if you're a past master in the art of canning, one of the homemakers who counts her jars by tens instead of singly, there ought to be some pleasant surprises for you in these pages. The recipes in the jam and jelly chapters run a truly magnificent gamut of fine flavors. And have you ever done any drying of fruits and vegetables? The techniques for this method of food-saving have been enormously improved of late and if you once try the directions in Chapter 8, I prophesy you always afterward will want some dried foods in your larder.

Meat and fish have been purposely omitted because under wartime rationing only a few families will have surpluses of these foods to can. But it's the garden things that give variety to our meals anyway. With a stock-pile of them to draw on you will have everything you need from breakfast jam to a filling for your dinner pie when winter comes.

ELIZABETH BEVERIDGE

DICTIONARY OF TERMS IN COMMON USE

Every trade has its own jargon. Food preservation is no exception. These are all standard terms.

Blanching—Dipping raw products into boiling liquid (usually water) in order to loosen the skin for easy removal. Used for large fruits and tomatoes.

Boiling—The point at which a heated liquid bubbles vigorously. At sea level this is 212° F. for water. At higher altitudes boiling takes place at lower temperatures, and this must be allowed for in canning processes.

Brining—A method of preserving foods in a solution of salt and water.

Closure—The combination of pieces (caps, rings, discs, rubbers, etc.) that make it possible to seal a jar hermetically.

Cold Pack—A method of filling jars, in which the prepared food is put into the jars uncooked. Used mostly when it is desired to keep the food whole or for soft fruits that might break up if heated before packing.

Dry Pack—To pack without added liquid.

Head Space or Head Room—The small amount of air space left at the top of the jar when it is filled for processing to allow for expansion of the food as it heats.

Hot Pack—A method of filling jars in which the food is precooked before it is packed. Usually preferred to cold pack because the cooking shrinks the food so more can be put into each jar; also shortens the processing time.

Parboil—To boil until food is partially tender.

Pasteurization—Partial sterilization. Food is heated to a specific temperature below the boiling point and held there for a definite length of time.

Precook—Same as "parboil." In canning it is a step in the "hot pack" method, carried out before food is put into jars to shrink food and shorten processing time.

Pressure Canning—The method of canning at temperatures higher than boiling, secured by means of increased pressure built up by confined steam.

Pressure Cooker or Canner—A large kettle with a steam-tight cover held in place by some type of clamping device and fitted with a gauge for registering the pressure inside the kettle.

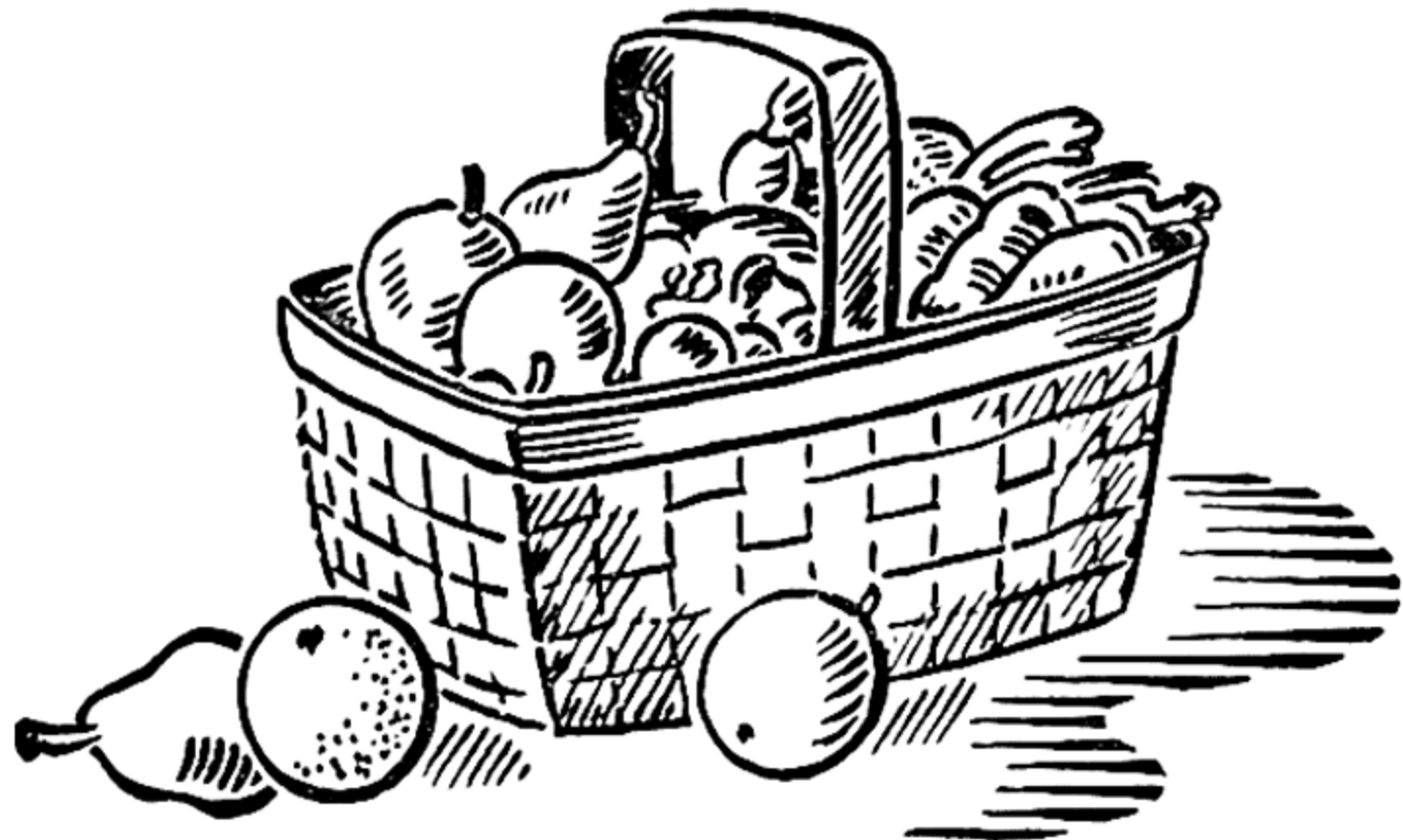
Processing—Cooking the food *after* it has been packed in jars to kill bacteria. Processing includes the water bath and pressure cooker methods.

Salting—Preserving food with dry salt. In the case of vegetables it draws out juices thus forming its own brine.

Sealing—Closing a container to prevent the entrance of air and bacteria.

Simmering—Cooking at temperatures just below the boiling point. Differs from pasteurization in that no specific temperature and definite period of time are required.

Water Bath—The method of canning by which filled jars are immersed in boiling water and kept there for a specified length of time. Sometimes referred to as the "hot water bath" or the "boiling water bath."



Chapter One

YOU LOOK FACTS IN THE EYE

IN THIS fortunate country we are not threatened with starvation. But while the war lasts and perhaps for some time after it the unlimited variety of foods to which we've always been accustomed will be slashed in many directions.

With scarcities before her and rationing on top of her what can a homemaker do? Resign herself to going through the winter without lots of the garden things she knows are health insurance for her family? The thousands upon thousands of Victory gardens that have been planted all over the country refute that. American women have stood up to emergencies before. Today our ingenuity, energy and protective instinct for our family's well-being are stronger than ever. This is war and every one of us has been drafted into the quartermaster corps of the civilian army.

So making food stretch is our latest job. And that, I feel sure, is why you're holding this book in your hand now. Like thousands of others who have never before given a thought to the mysteries of preserving food at home, or who have specialized on a few luxuries as a hobby, you've rolled up your sleeves and are asking "How do I start?"

Because all of us are too busy these days to do any unnecessary work, the first question each of us must answer is:

WHAT FOODS SHOULD I SAVE?

THERE are several answers to this question but the first and most important stems back to health.

Nutritionists divide fruits and vegetables into three major groups explaining that each group does something for us the other two can't do as well. Suppose we take a quick glance at them:

The Citrus Fruits, Tomatoes or Raw Cabbage or Salad Greens



Oranges, lemons, strawberries, grapefruit, melon, tomatoes, cabbage, salad greens

The main job of this group is to supply us with vitamin C which keeps the teeth, gums, blood vessels and bones in good condition.

How much should my family eat every day?

At least 1 serving.

The Green, Leafy and Yellow Vegetables



Green asparagus, snap beans, peas, broccoli, cabbage, spinach, other greens, peppers, carrots, squash, yellow turnip, yellow corn, pumpkin, sweet potatoes

Briefly this group's great gift to mankind is vitamin A which builds up resistance to disease. It also prevents night blindness—our men of the air force consume large quantities of it.

How much should my family eat every day?

At least 1 serving.

All Other Fruits and Vegetables



Potatoes, onions, celery, beets, kohlrabi, white turnips, eggplant, parsnips, apples, peaches, bananas, prunes, apricots, any others you think of

This group is especially rich in minerals and is a veritable grab bag of vitamins.

✦ How much should my family eat every day?

2 or more servings: 1 should be raw.

By eating the proper amounts from each of these groups your family will feel more vigorous, keep in better spirits, be more resistant to colds and other illnesses. If, therefore,

you foresee shortages of fresh, canned and frozen fruits and vegetables in your local markets next winter your safeguard is to build up a reserve while fresh things are plentiful and cheap. Plan your food bank around the three groups we've just talked about. Practically any fruit or vegetable from a group will do the work, nutritionally speaking, of any other member of that group.

EVERYONE CAN SAVE SOMETHING

Before you can make up your mind about what and how much food you're going to save this season you'll need to take stock of your home. If you live in a two-by-four apartment, for example, it's obvious you have no place to store dozens and dozens of jars of fruits and vegetables. And on a farm it would be equally futile to can carrots when you can perfectly well store them in your cellar or vegetable pit. It's the old story of cutting your coat according to your cloth and these suggestions may be of help:

If you live in an apartment—Your canning equipment is probably sketchy and your storage space next to nothing. But after all the market is only a few minutes away and you'll be able to buy fresh things all through the winter even though the variety may be very much less than you've been used to. Your chief worry will be the rationed foods—particularly the all-important, all-purpose canned tomato.

Luckily tomatoes are the easiest of all vegetables for the home canner to tackle. So why not concentrate on them, doing a few jars at a time? Before you know it you'll have an imposing array. It may mean you'll have to store your best hat under the bed and your husband's overshoes in the linen closet but who cares if it keeps your family well and releases points for other needed foods?

If you have any extra time or storage space it would be a master stroke to put up a few jars of peaches, pears, cherries or plums for very special treats next winter.

▶ **If you live in a town**—Perhaps you have a Victory garden or are able to buy garden-fresh produce from a nearby farm. Then by all means try to get your hands on a pressure cooker and go in for peas, green or wax beans, asparagus, corn, lima beans or greens. (Southerners will insist on okra, too!) Lacking the pressure cooker you can, like your city cousin, specialize on fruits and tomatoes. And don't overlook the hardy things—carrots, turnips, onions, squash, potatoes, apples—if your cellar is suited to storing them safely. You may even be able to do a little drying and pickling.

▶ **If you live in the country**—Put up everything in sight. What you can't get into jars, store in the cellar or ground or dry or freeze it. Let nothing go to waste. Make windfalls into fruit butters. Use late green tomatoes for pickles and relishes. Convert a few boxes of berries into jelly or jam. Pick that handful of fresh beans and drop them into the brine jar. If in your enthusiasm you should accumulate more of one food than you really need you can always swap the surplus with a friend who's overstocked on something else.

SEVEN WAYS TO BUILD A FOOD RESERVE

Canning is the first and often the only method we think of when someone suggests what a fine idea it would be if we stored up a little food against the long winter. But as I've already intimated there are several *other* ways—six, to be exact—which even an amateur can use successfully given the right conditions. It may be fun for you to get a pencil and run quickly through this list, checking the methods you think are feasible for you:

1. *Canning* or putting fruit and vegetables in jars. There's only one catch about this—you'll need a pressure cooker for the non-acid vegetables. If you don't own one and can't buy one there's something else you can do as I'll explain later. Everything else is clear sailing and directions are as easy to follow as a recipe for a cake.

2. *Preserving* or putting up fruit butters, jams, jellies, conserves. As fairly large amounts of sugar or other sweetenings are required for these you may not be able while the war lasts to do up as much of them as you'd like. But don't entirely neglect them. The butters require the least sugar and are especially good on hot breads and in sandwiches for the children's lunch boxes.

3. *Storing* in the cellar, pit or ground. The simplest of all methods but you must have a house with a cellar or some land for a pit. And the climate shouldn't be too warm.

4. *Pickling*—Besides the familiar cucumber this includes all sorts of delightful relishes, chopped pepper hashes, green cucumber pickles, pickled peaches, cabbage, cauliflower and onions. How they brighten up a dull meal!

5. *Salting*—Preserving vegetables with salt. You don't need jars for this—just crocks or wooden kegs. Sauerkraut is made by this method and cucumbers, snap beans and green tomatoes are almost as easy to do.

6. *Drying*—Dried fruits and vegetables save storage space and can be prepared with homemade equipment. The fruits grow sweeter as they dry—nature's neat trick for saving sugar.

7. *Freezing* is the most modern of all food storage methods. The flavor of fruits and vegetables done by this method is the closest to that of freshly picked things. But of course you can only use it if you own a home freezing unit or live near enough a locker plant to rent space.

DO I NEED SPECIAL TOOLS?

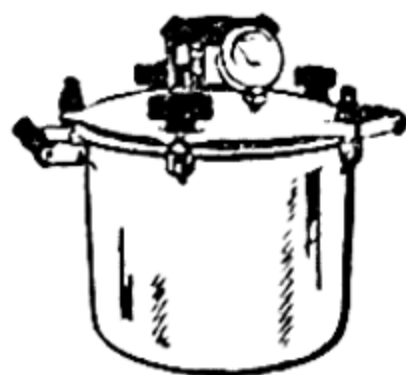
With a few exceptions you probably have in the house right now all of the equipment you need for creating a sizable and varied food reserve for next winter. Whip out your pencil again and let's check:



A large kettle for making fruit butters, jams, jellies and relishes. Roomy enough to hold the ingredients and let them boil up. Useful too for pre-cooking fruits and tomatoes done the "hot pack" way (see page 23).



Water bath canner for processing fruits and tomatoes. Deluxe type comes fitted with convenient wire rack for jars. A satisfactory substitute can be improvised at home from a wash boiler or deep kettle with a lid (see page 22).



A pressure cooker for processing all vegetables except tomatoes. If you don't own one try to join a neighborhood canning group or a community center on a share-the-equipment, share-the-work basis. Otherwise forego vegetables.



Cutlery—Sharp paring knives with stainless steel blades to prevent discoloration of foods. A long bladed knife for slicing. A spatula for working air bubbles out of freshly filled jars before sealing them. A pair of kitchen scissors.



A colander or sturdy wire strainer for washing fruits and vegetables. Don't overcrowd it; water must reach all surfaces of food to remove bacteria-laden dirt. Lift colander out of water instead of pouring water off food.



Jelly bag to separate juice from pulp for your sparkling fruit jellies. A bag on a metal frame is handiest but a homemade one of clean white flannel or several thicknesses of cheesecloth will do. Hang it over a bowl into which the juice can drip.



Jar lifter—A simple wire implement that grasps the neck of a jar firmly below the cap making it easy for you to shift it from hot water bath to table. If you don't own one it's a good plan to protect your hand by wearing a heavy cotton glove or mitt.



A ladle, long handled. Is yours made of aluminum, enamelware or tin? Whatever it is you'll find it indispensable for ladling your cooked fruits and juices from preserving kettle into jars and jelly glasses.



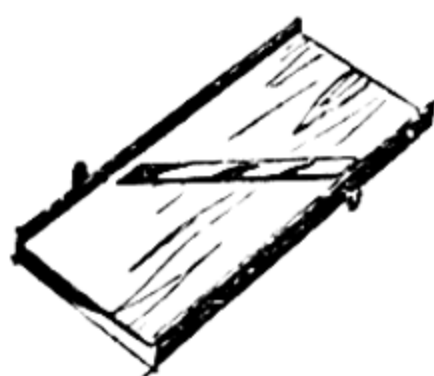
Tongs—The kitchen species but twice as useful as their silver counterpart. Retrieve hot lids and rubber rings from the sterilizing kettle with them or, handling them gently, slide golden peach halves into the waiting jars.



A *funnel* with a short wide flange that fits inside jar necks. A great help in steering the unruly small objects—berries, peas, beans—into their appointed places. May be made of enamel, tin, aluminum or steel.



Fruit press—It's a priceless time and labor saver when you want to make fruit butters and purées. In another type, not illustrated, a hand turned rotary blade instead of a wooden mallet mashes the fruit.



Kraut cutter—If your family likes kraut do humor them—cabbage is crammed with food values. With a cutter you can slice large amounts quickly and easily and the uniform slivers will cure evenly. Some have three blades.

Other Tools Needed

Bowls of assorted sizes

Jars and jelly glasses

Household scales

Vegetable brush

Thermometer

Cutting board

Plenty of clean cloths

Measuring spoons and cups

A rubber holder for grasping jars and caps

Long handled spoons, one or two of them wooden

In the battle of food preservation your enemies are invisible organisms that try to spoil the foods they've invaded. It's you against them and the more you know about their habits the easier it will be for you to outwit them. So let's spend a few moments tracking them down even though it may sound like a gloomy pastime:

A QUIZ FOR YOUR PROTECTION

You: What makes food spoil?

Answer: Tiny organisms known as bacteria, yeasts and molds. The last two are nothing to worry about—they're easily destroyed by heat during canning.

You: How do they get into food?

Answer: Like the germs that attack humans they're everywhere—in the air, in the water, in the dirt that clings to the food, on the jars and utensils with which the food comes in contact and in the food itself.

You: How can I be sure of getting rid of them?

Answer: By being very, very careful to follow the rules. In this book you'll find the latest and best directions that experts have been able to evolve for the seven methods of food preservation. Years of scientific research have been spent in perfecting them. Treat them with the respect you feel for your doctor's prescriptions.

You: In canning I suppose it's the heat of the water bath and the pressure cooker that destroys the bacteria?

Answer: Right. But it's equally important to have the jars hermetically sealed after filling. It doesn't do much good to process foods unless you make sure that no fresh enemies can sneak in.

You: Why is it safe to can tomatoes the water bath way and not other vegetables?

Answer: Because tomatoes, like fruits, contain natural acid. The bacteria in acid foods succumb easily to the temperature that can be reached in the water bath. Those in the non-acid vegetables are much more stubborn. Only the high temperatures you get in the pressure cooker will annihilate them within a reasonable time.

You: I've heard of people being made ill by eating home-canned foods. Does it happen often?

Answer: Luckily, no. Of course it's caused by some variety of food spoilage. It's a safe rule never to taste a morsel of home-canned food that looks or smells the least bit suspicious. Destroy it by burying or burning it so that no human—or animal—can get hold of it.

You: But can you always tell when a food is spoiled?

Answer: Not always. The highly dangerous botulinus bacteria create a poison that frequently is not betrayed by taste, smell or appearance. It seldom if ever occurs in a food that has been properly processed. But to play absolutely safe you should *always boil all home-canned vegetables except tomatoes before you taste them even if they have been canned in a pressure cooker and even if they look all right.* Boil for 5-10 minutes before tasting.

You: But if I have to cook home-canned vegetables so thoroughly why don't I have to treat commercially canned ones the same way? I've always been told that short fast cooking was the best thing for them.

Answer: Because commercial canners process their vegetables under scientific and carefully controlled conditions you are protected against spoilage when you buy a reputable brand. Such conditions cannot be duplicated at home. Quick cooking *does* conserve vitamin values.

You: Then home-canned vegetables are not as nutritious as the commercial kind?

Answer: Some food values are lost in the longer cooking recommended for home-canned foods but the loss is more than offset by the protection you give your family.

You: I've been wondering about foods stored in cellars and pits. What keeps them safe?

Answer: Partly cool temperatures, partly the firm protective skin which nature has given them. But let that skin be broken or badly bruised and it won't be long before bacteria move into that perfect feeding ground.

You: Why don't jams, fruit butters and jellies have to be hermetically sealed like ordinary canned fruits?

Answer: Cooking them kills whatever bacteria may be present in the raw fruit and the large amount of sugar that is added acts as a barrier to new invasions.

You: Even in ancient times people seem to have known that salt protects foods.

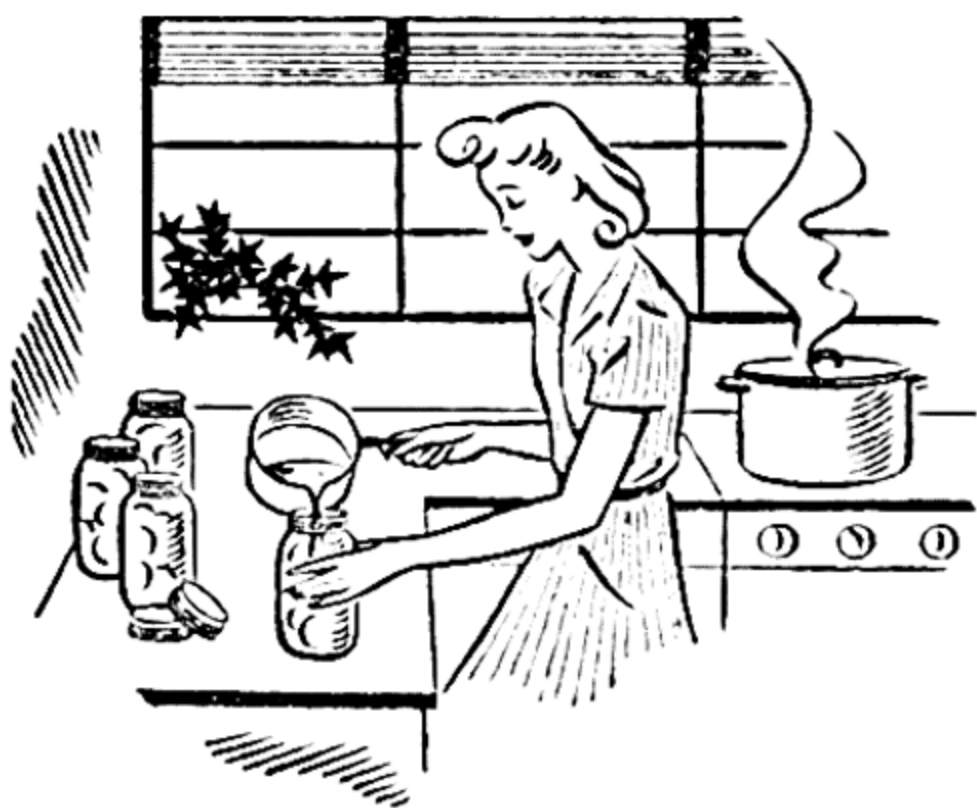
Answer: Yes, but it took modern science to discover why. Bacteria hate salt and can't grow in it. Pickled foods on the other hand owe their prolonged life to the natural antipathy bacteria have for acid—in their case vinegar.

You: But drying doesn't seem to use any preservatives.

Answer: The secret is lack of moisture. Destructive organisms need moisture in which to develop. Deprive them of it and they're helpless.

You: I suppose freezing kills bacteria?

Answer: Not really. It merely puts them to sleep like bears in winter. So long as the food stays frozen everything is dandy. But the minute it thaws out the bacteria wake up. That's why you should keep frozen foods frozen until you're ready to use them.



Chapter Two

YOU DECIDE TO CAN

ONCE you get into the swing and rhythm of canning it becomes as fascinating as a dance. That last minute double quick step between stove and table, the final check on lids and rubbers, a quick glance at the time, then back to the table for the finishing touches to those lovely glowing fruits or vegetables. Suddenly you discover you're working with the precision of a clock. And that's when canning begins to be fun.

But like any game canning has its rules, rules that add up to success. The following points are for you to tuck away in a corner of your mental notebook:

Memo to me

As fruits and vegetables ripen I'll put up a few jars at a time. It's the easiest way to build a stockpile.

Not everything has to come from my own garden. I can buy fruits and vegetables if I know they are fresh. But I must waste no time about putting them up.

To prevent spoilage I'll keep my food in a cool place until it's ready to can. I won't leave it piled up in baskets or bowls. That hastens spoilage.

Note: A quart jar holds twice as much as a pint, uses only one cap and ring; saves time and materials.

I must never use an empty mayonnaise or coffee jar for my canned foods unless I'm sure I can get a tight seal with a standard or special canning cap.

If my used rubber rings are still pliable and unstretched I can re-use them on jars of fruits and tomatoes. But for other vegetables I must have new ones.

I'll never cheat on processing time. It may undo all my fine work.

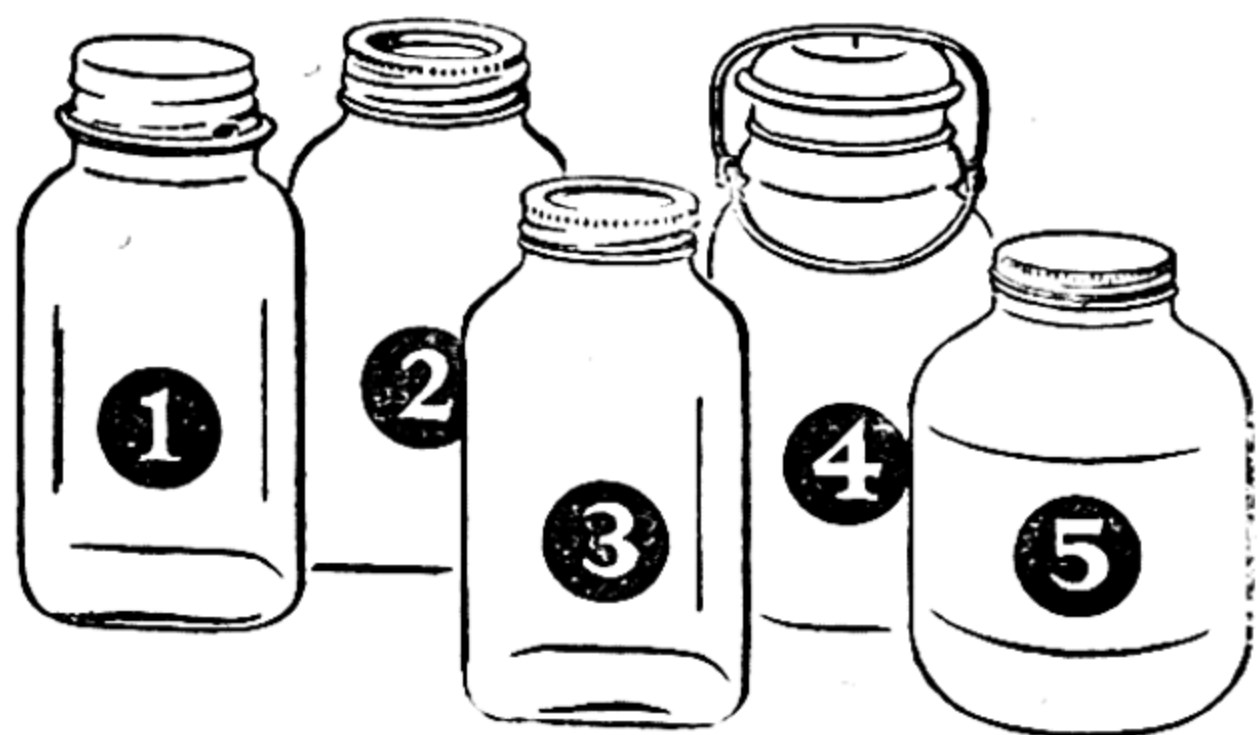
Lift a hot filled jar by the neck; taking hold of the cap may loosen it.

Never invert jars for cooling, it's apt to break the air-tight seal.

Don't let jars touch each other while cooling. They need air to circulate around them.

Important: Under no circumstances must I open jars to add more liquid after processing. The seemingly empty space inside is filled with sterilized air—a perfect protector of my food.

Note: Canned foods like a cool, airy place for storage and it's all the better if dark.



KNOW YOUR JARS

(Once you've decided to do some canning practically your first thought must go to the jars you'll need for holding your handiwork. If you happen to have any in the house which are in good condition (I'll give you more details later) by all means use them. Get out all you have and see whether you have enough caps and rubbers on hand to go with them. If not, make a list of how many and what kind you need.

The difference between jars lies in their "closures" which merely means the manner in which they are sealed. All closures are easy to manage but each requires slightly different handling. Because so much depends on proper sealing we'd better stop here and get acquainted with our jars.

1. **Metal top Mason jar**—The Mason jar with the zinc top is the oldest type. In your childhood you must have seen shining dozens of them lined up in your grandmother's preserve closet. The zinc cap is lined with porcelain. A rubber ring is pressed down against the projecting ledge that encircles the neck. When the top is screwed down it pinches the rubber, sealing the jar completely.

Check-up—Before you start canning examine every jar and cap. Run your finger around the sealing ledge to see whether it is nicked or cracked. Make sure that the cap isn't bent. If you are in doubt fill jar with water, put on a good rubber ring and cap and turn upside down for a few minutes. If it leaks try another cap and discard the jar or cap, depending on which one is at fault.

New caps are not being made of zinc now but the old ones, if in good condition, are quite all right to use.

2. Glass top-seal jar—Mason jars can also be bought with a glass and metal top like the illustration. Here the glass disc or lid is the same diameter as the jar top. Around its edge is a groove into which a rubber ring fits. (These rings are smaller than those on the first jar.) The metal screw band holds the ring tightly against the top rim of the jar, making a tight seal.

Check-up—Because the sealing surface of this jar is at the neck rim you must inspect it *carefully* for nicks.

3. Vacuum-seal or self-sealing jar—Still another cap that fits the same style of jar is the one composed of two metal pieces. The flat capping disc has an ingenious rim of sealing composition on its under surface which seals the jar at the rim without the aid of a rubber ring. The screw band holds the disc in place until the jars are processed and cooled. Then the band can be taken off and used to seal other jars. Of course a new disc must be used on every jar. With these jars too you must inspect the neck rim for nicks.

4. Glass top jar—The jar with a glass top held in place by a wire bail is familiar to everyone. A rubber ring exactly like the one used with the zinc cap is fitted to the top of the jar, the glass cover is put on and the long wire bail shoved over until it snaps into place on the top. The shorter bail when pushed down tightens the first.

5. Commercial food jars—Jars in which salad dressings, pickles and other foods are sold can be re-used for home canning *if* you can work out a perfectly tight seal by means of standard caps and rings or new sealing discs. The jar's original sealing disc will not do the trick.

For some coffee and mayonnaise jars you can buy new sealing discs from your grocer or the packer. To hold them firmly in place during processing and cooling you use the original metal cover, first removing the old ring of sealing composition which you will find on the inside. One metal lid can be used to seal a number of jars if you remove it each time after the jar has cooled. Paper lids cannot be used for sealing.

Do not process refilled commercial jars in the high temperatures of the pressure cooker unless the food manufacturer whose jar you are using recommends it.

Tin cans—Not many of these will be available during the war and the machinery for sealing them will be very difficult for individual homemakers to get.

Jelly glasses—The commonest types are the two illustrated. Both have sides which flare slightly, permitting the jelly to be slipped out easily without spoiling its shape.



Metal lids protect the contents from dust. Small odd sized jars can be used for jellies that will be spooned out instead of unmolded. They are useful too for jams, conserves or marmalades that do not require a hermetic seal.

HOW TO GET A TIGHT SEAL

Each of the five types of jars is sealed, as I've already said, in a slightly different way. Unless you're already familiar with them study the following directions carefully; a great part of your success in canning depends on the air-tight sealing of every jar you put up.

Metal top Mason jar



Dip rubber ring in hot water and snap onto neck of jar. *To seal partially* (before processing) screw cap down until it grips the rubber, then turn it backwards until you can barely feel it let go. *To seal completely* screw cap down tightly.

Glass top-seal jar



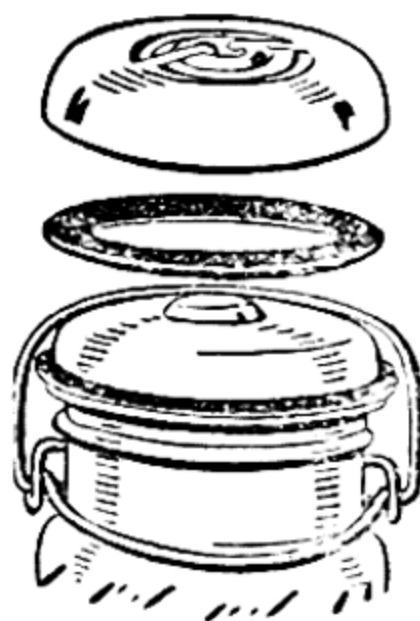
Dip rubber ring in hot water and snap onto groove of glass disc. Place on jar with rubber between disc and jar rim. Put on screw band. *To seal partially* (before processing) screw down until it grips, then loosen slightly. *To seal completely* screw down tightly.

Vacuum-seal or self-sealing jar



Pour boiling water over the discs and let stand until ready to use. Put disc, composition side down, on top rim of jar. Put band on and screw down firmly. *Do not use force.* No further attention is necessary after processing.

Glass top jar



Dip rubber ring in hot water and fit on neck of jar. Put glass top on. *To seal partially* (before processing) bring the flattened wire bail up over top and snap into groove. Leave the other bail up. *To seal completely* push lower curved bail down.

Commercial coffee jar



This is sealed like the vacuum-seal jar except that instead of a screw band the original metal cover that comes on the jar is used to keep the disc in place. *The original sealing composition must be removed from the cap before using.*

Important: Screw bands from vacuum-seal or glass top-seal jars should be removed after 12 hours. Wash, dry and put them away in a dry place until needed again. If left on the jars they may stick or rust and be very difficult to remove later.

HOW TO STERILIZE JARS

When you can in the water bath canner or the pressure cooker you are sterilizing both the jars and the food at the same time. But when you put boiling hot relishes, jellies or fruit juices into jars or glasses and seal immediately you must sterilize the jars first. After washing jars immerse them in hot water, bring the water to a boil and boil for 20 minutes. Or sterilize in the pressure cooker at 15 pounds pressure for 15 minutes. Leave in water or in

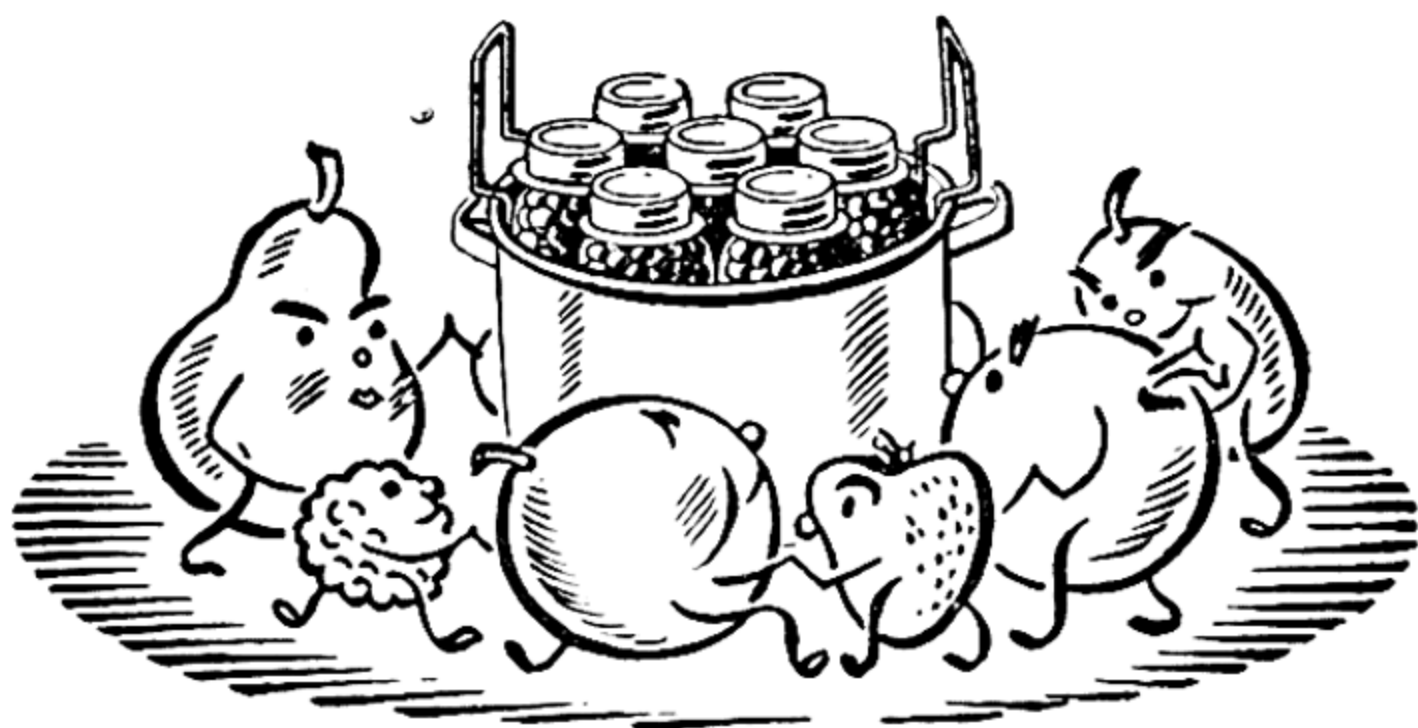
cooker (with petcock open and cover loosened) until ready to use. Remember that sterilization is of no use if you carelessly plant other bacteria on the sterile surfaces—so handle carefully and do not touch any part that will come in contact with food.

If food has spoiled in a jar wash it well, then boil it for 2 hours; or wash with a solution of 1 teaspoon of household lye or 1 tablespoon of washing soda to a quart of water. (Be careful of your hands.) Leaving such jars out in the sun for several days also helps to kill bacteria.

CANNING PREVIEW

No matter what fruit or vegetable you can your activities will follow the same general pattern once the great day arrives. So run through this practice "routine" sitting right where you are. It's the order of work that experienced canners follow because it is the quickest and easiest route from the garden to the jar.

1. Assemble and inspect jars and lids.
2. Get canner or pressure cooker ready for action.
3. Wash jars, rinse, sterilize if needed. Leave in hot water until ready to fill.
4. Prepare food for first canner or cookerful of jars.
5. Fill jars, adjust caps.
6. Process for the length of time called for.
7. Complete the seal of all jars except those of the vacuum type.
8. Check for leakage.
9. Cool and label.
10. Store in a cool, dark place.



Chapter Three

BRING ON YOUR FRUITS—AND TOMATOES

AT LAST you're in the canning business and about to be initiated into its most delightful branch—the canning of fruits. A few months from now when your fond eye rests on rainbow rows of rhubarb, berries, peaches, pears you'll admit with veteran canners that you've never had such big returns for such a modest effort. For fruits are the easiest of all foods to can—with one exception. That exception is the tomato, the vegetable whose acid qualities make it sort of first cousin to fruits.

As the method of canning tomatoes is practically identical with fruit canning I've included it in this chapter.

Let's begin with a few flashes for your mental notebook:

Memo to me

I'll use the finest, freshest fruits obtainable, whether from my own garden or bought in market.

Fruits that have fully ripened on tree or vine will have a better flavor than those picked before maturity—and will require less sugar.

Once the fruit is prepared, rush it into the jars. The longer it stands around exposed to air the greater will be its loss of attractiveness and flavor.

When I place jars in the canner I must not let them touch each other or the sides of the kettle—if I do the food inside will not heat uniformly.

Note: Don't start to count processing time until the water in the water bath is boiling vigorously; keep it boiling throughout the processing period. This is the only sure way of heating the fruit thoroughly and killing bacteria.

ABOUT WATER BATH CANNERS

The water bath canner illustrated on page 7, complete with its rack for holding jars, is an ideal device for canning fruits and tomatoes. But if you don't own one you can improvise a substitute which will answer every purpose.

A wash boiler, or any large kettle with a close fitting lid, can be pressed into service provided it is at least 4 inches deeper than your jars. This container must be fitted with a rack which will hold the jars about an inch off the bottom so that the boiling water will be able to circulate freely under them. You can make such a rack out of narrow laths nailed together lattice fashion. If the sides of your container extend two or three inches above the tops of jars when they're resting on this rack, you're all set.

If you happen to be one of the lucky owners of a pressure cooker you can use it as a water bath canner by simply leaving its cover unclamped and the petcock open.

WHAT IS THE "HOT PACK" METHOD?

Hot pack sounds imposing but nothing could be simpler. It means that food is briefly precooked on top of the range before being packed hot into jars and put in the water bath. There are several good reasons for precooking: it shrinks the fruit so that more may be packed into each jar; it draws out juices for filling the jars; it cuts down on the processing time in the water bath. On pages 27-31 detailed directions for precooking fruits are given.

That disposes of the preliminaries and now you're ready to get down to the details of canning fruit. If you will familiarize yourself with the step-by-step plan that follows you'll find yourself swinging through the actual work smoothly and happily. No matter what fruit you can the routine is the same.

HOW TO CAN FRUIT

1. Assemble as many jars as you will need. Discard any with cracks or chips. See that you have all needed covers, rings, etc.

2. Put the rack in the water bath canner. Unless you already know how many jars will fit in it at one time without touching each other, arrange empty jars on the rack and count them so that you will know how much fruit to prepare for each batch.

3. Half fill canner with water and place on range to come to a boil. Fill teakettle and put on to boil, too.

4. Wash jars and covers in hot, soapy water. Rinse in hot water and place in canner to keep hot until you are ready to fill them.

5. Grade fruit for size and ripeness so that you can fill each jar with pieces of fruit of approximately the same size. Set soft or overripe fruit aside to be made into juice for sirup or into fruit butters.

6. Prepare just enough fruit for one canner full. (See directions for fruit preparation, pages 25-32.)

7. Remove empty jars from canner one at a time, drain, and fill quickly with prepared fruit. Add sirup, juice or water to within $\frac{1}{4}$ inch of the jar top.

8. Run a narrow spatula around the inside of jar to remove air bubbles.

9. Wipe sealing surface clean.

10. Adjust cap and partially seal (see pages 18-19).

11. Replace jars in canner.

12. Add boiling water to canner from teakettle until water rises an inch above the tops of the jars.

13. As soon as water starts to boil, put on cover. Start counting processing time from this moment. Keep water boiling throughout processing time. (See page 32 for time table.) While this canner load is boiling prepare jars and fruit for next batch.

14. If you haven't a jar lifter dip enough water out of canner to enable you to grasp jars by neck. Remove jars and complete seal immediately (see pages 18-19).

15. Place on folded towel to cool, in upright position, where no draft will blow on them. Exposure to sudden changes of temperature may cause jars to crack.

16. When cool, tip and turn jars to see if there is any leakage. If you do discover a leaky jar, open it and examine the sealing edge for nicks. If there are none, put on a new rubber or cap and reprocess, following steps 10 through 15. If rim is nicked, transfer contents of jar to a new one before reprocessing.

17. Label jars and store them in a cool, dark place.

By this time—if you've never canned before—you must be wondering how you are to know when fruit is at the right stage for canning and how you should prepare the different varieties for packing into your jars. The following pages tell you all that in such complete detail that you'll find your confidence increasing by the minute. And I've added a little table showing you how much raw fruit you'll have to provide in order to get a quart jar of canned fruit.

Following that information is a time-table that gives you the exact number of minutes each kind of fruit should stay in your water bath.

And finally you'll come to the matter of sugar and other sweetenings—whether to use them, how to use them and what they do for your fruit.

I always advise novices to do up only three or four jars of fruit the first time they try canning. For though there is nothing hard about it there *are* a good many details to remember and with a large quantity of ripe fruit spread out before you you're apt to find yourself rushing along at breakneck speed as if your life depended on it. The smaller quantity will prove to you that putting up fruit is a no more complicated nor mysterious job than making your favorite dessert.

HOW TO CHOOSE FRUITS FOR CANNING

APPLES

Use firm, sound, tart apples, slightly underripe. Fall and winter varieties, canned soon after being picked, usually have more flavor than sweet summer ones. The sound parts of windfalls may be used.

APRICOTS

Choose sound, well colored apricots with good odor, ripe but not soft.

BERRIES

*All tender
soft kinds*

Choose berries that are ripe and well colored, but not soft enough to crush in handling. Keep in shallow containers to prevent crushing.

**CHERRIES,
SOUR**

Sour cherries should be bright red in color, plump and juicy. Fully ripe fruit is much sweeter than underripe fruit.

**CHERRIES,
SWEET**

Choose firm, well colored fruit.

CRANBERRIES Look for firm, bright colored berries with few if any shriveled or soft ones.

FIGS

Choose figs that are sound and firm but not overripe.

**GOOSE-
BERRIES**

The more nearly ripe gooseberries are, the larger and sweeter they will be. Choose large berries for canning. Small ones are all right for jelly.

GRAPES

Grapes are rarely canned as grapes; they are usually made into juice, jelly or conserve. For jelly, look for some underripe ones in the lot; for juice to drink, fully ripe grapes are sweeter. Grapes should have a rich odor and not be so ripe as to be falling from the stems. Concords are the favorite variety.

PEACHES

Tree-ripened peaches have much better flavor than those picked green. They should have a good bright color and ripe peach odor. Freestone peaches are easier to handle than clingstone varieties.

PEARS

Bartlett pears are most popular for canning. For best flavor and juiciness they should be well ripened but firm. If winter pears are used they should be allowed to ripen in storage before canning.

PLUMS

For canning, plums should be picked just at the stage when they begin to ripen—before they are at their best for eating from the hand. If too ripe they go mushy; if too green they lack flavor.

QUINCES

Quinces for canning should be well ripened. They are firm and of a greenish to golden yellow color. Avoid those which are all green. Because of their strong flavor they are often combined with other fruits. Firm sweet apples combine well with quinces, since the texture is alike.

RHUBARB

Select young tender stalks. The highly colored varieties are most attractive. Older rhubarb becomes very acid.

HOW TO PREPARE FRUITS FOR CANNING

Also see pages 32-33 for processing time table

APPLES

Pare, core and slice or quarter. To prevent darkening, drop immediately into a solution of 1 gallon of water, 2 tablespoons salt and 2 tablespoons vinegar. Drain and simmer for 5 minutes in hot light or medium sirup. Pack in hot jars and cover with sirup.

APPLES

*Whole or
baked*

Core whole apples; pare if you wish. Simmer in light or medium sirup until almost done, or bake as for serving. Pack in hot jars and cover with hot light sirup.

APPLESAUCE

Quarter apples without paring or coring. Cook until tender with a little added water, put through sieve or press. Sweeten to taste. Pack boiling hot.

APRICOTS

Pack peeled or unpeeled, whole or halved. To peel, plunge into boiling water until skins loosen, then into cold for a few seconds; slip off skins. Leave whole or cut in half and remove pits.

To pack cold put raw fruit into hot jars, cover with hot medium heavy sirup.

To pack hot simmer 4 to 8 minutes in medium or medium heavy sirup, pack in hot jars and cover with sirup.

BERRIES

Blackberries

Blueberries

Cranberries

Huckleberries

Loganberries

Raspberries

Sort berries, removing any spoiled ones and keeping overripe or imperfect ones by themselves. Wash and remove any caps or stems; drain.

To pack cold put perfect berries in jars raw, shake down. Fill jars with hot medium sirup or juice (see page 35).

The berries may rise to the top of the jars after processing but will stay whole.

To pack hot sprinkle berries with $\frac{1}{4}$ to $\frac{3}{4}$ cup sugar for each quart of berries. Heat gently until sugar is dissolved. Pack in hot jars.

**CHERRIES,
SOUR**

Wash and pit cherries, saving the juice that is extracted in pitting.

To pack cold put raw cherries into hot jars and shake or press down. Cover with hot medium or heavy sirup made with the juice and as much added water as necessary.

To pack hot mix pitted cherries with sugar ($\frac{1}{2}$ to 1 cup for each quart of cherries), bring to a boil. Pack in hot jars and cover with the sirup that has formed. Cherries for pies can be packed with little or no sugar.

CHERRIES, SWEET

Wash and prick once with a fork to prevent skin bursting when heated.

To pack cold put raw cherries into hot jars and shake down. Cover with light or medium sirup—not too hot or they may shrivel.

To pack hot put cherries into warm light or medium sirup and bring to a boil. Pack in hot jars and cover with sirup.

FIGS

Sort and wash. Cover with hot water and let stand 3 to 4 minutes. Pack in hot jars and cover with hot medium sirup.

GOOSE- BERRIES

Remove blossom ends and wash.

To pack cold put raw berries into hot jars and cover with hot medium or heavy sirup.

To pack hot put about 1 quart of berries at a time into 3 cups of boiling medium sirup. Leave for not more than $\frac{1}{2}$ min-

ute. Remove from sirup to colander with a slotted spoon and allow to drain until several quarts have accumulated. Pack in hot jars and cover with the sirup. The sirup drained from the colander is returned to the kettle.

PEACHES

Immerse peaches in boiling water until skins will slip; plunge into cold water for a few seconds. Peel, cut in half and remove pits.

To pack cold place raw halves in hot jars pit side down. Cover with hot light or medium sirup if fully ripe or medium or heavy sirup if underripe.

To pack hot simmer 4 to 8 minutes in light or medium sirup, pack in hot jars pit side down and cover with sirup.

PEARS

Peel, cut in halves, remove cores. To prevent darkening drop into solution of 1 gallon of water, 2 tablespoons salt and 2 tablespoons vinegar. Drain before adding to sirup.

To pack cold place raw halves in hot jars, core side down. Cover with hot light or medium sirup. Recommended only for very ripe fruit.

To pack hot put pears into boiling light or medium sirup and boil for 4 to 8 minutes or until fruit is tender but not soft. Pack in hot jars, core side down and cover with hot sirup. Unless pears are fully ripe they should always be packed this way.

PLUMS

Wash and prick once with a fork to prevent bursting of skin. Or large plums may be peeled by first immersing in boiling water for about a minute and allowing them to stand for a few minutes, then slipping off the skins.

To pack cold place raw plums in hot jars and cover with hot medium or heavy sirup. Best method for peeled plums.

To pack hot simmer plums for 5 minutes in medium or heavy sirup. Pack in hot jars and cover with the sirup.

QUINCES

Wash, pare, cut into halves, quarters or eighths. Boil in light sirup until partly tender, pack in hot jars and cover with the sirup; *or* boil in water until partly tender, drain, pack in hot jars and cover with hot medium or heavy sirup.

RHUBARB

Wash, trim off leaf and root ends, cut in pieces $\frac{1}{2}$ to 1 inch long without peeling. Cook in heavy sirup until soft and pack in hot jars; *or* add $\frac{1}{4}$ to $\frac{1}{2}$ as much sugar as raw rhubarb, let stand until juice starts to flow; then bake or simmer until soft and pack in hot jars.

STRAW-
BERRIES

Wash and hull berries. Add 1 cup sugar for each quart of berries. Bring slowly to the boiling point and boil gently for 5 minutes. Let stand several hours or overnight in the kettle. Bring quickly to the boiling point and pack in hot jars.

TO MAKE A QUART OF CANNED FRUIT

| <i>Fresh Fruit</i> | <i>Am't Needed</i> |
|--------------------------|--------------------|
| <i>Apples</i> | 2-2½ pounds |
| <i>Apricots</i> | 2-2½ pounds |
| <i>Berries</i> | 1½-2 quarts |
| <i>Cherries</i> | 1¼-1½ pounds |
| <i>Cranberries</i> | 1½ quarts |
| <i>Peaches</i> | 2-2½ pounds |
| <i>Pears</i> | 2-2½ pounds |
| <i>Plums</i> | 1½-2 pounds |
| <i>Rhubarb</i> | 3-3½ pounds |

HOW LONG TO PROCESS FRUIT

This gives you the information you need in carrying out Step 13 of the water bath method described on page 24.

| <i>Product</i> | <i>How Packed</i> | <i>Minutes in Water Bath at 212° F.*</i> |
|--------------------------|--|--|
| <i>Apples</i> | Precooked, packed hot | 15 |
| | Whole or baked, packed hot | 5 |
| | Applesauce, packed hot | 5 |
| <i>Apricots</i> | Packed raw, hot sirup | 25 |
| | Precooked, packed hot | 15 |
| <i>Berries:</i> | | |
| <i>Blackberries</i> | Packed raw, hot sirup Precooked, packed hot | 20 5 |
| <i>Blueberries</i> | | |
| <i>Cranberries</i> | | |
| <i>Huckleberries</i> .. | | |
| <i>Loganberries</i> ... | | |
| <i>Raspberries</i> | | |

| <i>Product</i> | <i>How Packed</i> | <i>Minutes in Water Bath at 212° F.*</i> |
|----------------|-------------------|--|
|----------------|-------------------|--|

| | | |
|---------------------------|-----------------------|---------|
| <i>Cherries</i> | Packed raw, hot sirup | 25 |
| (Sour) | Precooked, packed hot | 5 |
| <i>Cherries</i> | Packed raw, hot sirup | 25 |
| (Sweet) | Precooked, packed hot | 10 |
| <i>Figs</i> | Packed raw, hot sirup | 120 |
| <i>Gooseberries</i> | Packed raw, hot sirup | 20 |
| | Precooked, packed hot | 10 |
| <i>Peaches</i> | Packed raw, hot sirup | soft 25 |
| | | firm 35 |
| | Precooked, packed hot | 15 |
| <i>Pears</i> | Packed raw, hot sirup | 30 |
| | Precooked, packed hot | 20 |
| <i>Plums</i> | Packed raw, hot sirup | 20 |
| | Precooked, packed hot | 5 |
| <i>Quinces</i> | Precooked, packed hot | 30 |
| <i>Rhubarb</i> | Precooked, packed hot | 5 |
| <i>Strawberries</i> | Precooked, packed hot | 5 |

* Times given are for pint or quart jars; if half gallon jars are used add 5 minutes.

At altitudes above 1000 feet, process 20 per cent. longer for each additional thousand feet. For example, at 2000 feet, precooked apples should be processed for 18 minutes; at 3000 feet, for 21 minutes; and so on.



WHAT ABOUT SUGAR?

As long as our national supply of sugar is limited, you probably will have to cheat the peaches to provide for the grape jelly. How you apportion your allotment will depend on your preferences and those of your family. Perhaps you will want to go light on the amount of sugar you add to the bulk of your pack so as to have enough to splurge on a few very special jars for guests. Or with one eye on your butter ration, you may want to reserve a large percentage for spreads for the morning muffins or luncheon sandwiches.

At any rate, decide just how much sugar you can assign to each fruit, and stick to your schedule so you won't run short before the canning season is finished.

The riper the fruit, the less sugar it needs. But the flavor of any fruit is improved when it is canned with some additional sweetening, so allow at least a little for everything which is to be eaten just as it comes from the jar. Fruits and berries destined to be used in pies, puddings and sauces may be put up without any sugar—their sweetening postponed to the time when you make these things. Similarly fruit which you plan to convert into jams and jellies later on can be put up without sugar, and you can add it when your jelly-making mood comes on and your sugar supplies may have been replenished.

Sugar Substitutes

Don't ignore the possibility of using sugar substitutes. Honey may replace sugar, measure for measure, either in making up the canning sirup or when adding the sweetening directly to the fruit. Corn sirup may be used in the same way, except that it has only about half the sweetening value of sugar, so it is usually advisable to replace no more than half the sugar with sirup. When using corn sirup reduce the water by $\frac{1}{2}$ cup for each cup of corn sirup used.

Sugar Sirups for Canning Fruits

While juicy fruits such as cherries and berries may be simply sprinkled with sugar, heated and packed in their own juice without the addition of any water, most fruits require some supplementary liquid to help fill the jars.

Usually this liquid takes the form of a sirup, made by boiling together sugar and water or fruit juice. Sirup made with fruit juice needs less sugar than that made with water.

To obtain juice for sirup, reserve any overripe fruit; crush; then simmer until fruit is soft and all the juice has been released. Strain if you want a very clear sirup.

The amount of sirup you need will vary with the tightness of the pack and the juiciness of the fruit itself. But you can figure on approximately $\frac{1}{2}$ cup of sirup for each pint jar of fruit and about $\frac{3}{4}$ cup for each quart jar.

To Make Sugar Sirups

| <i>Type</i> | <i>Sugar</i> | <i>Water</i> |
|--------------|----------------------|--------------|
| VERY THIN | 1 cup | 4 cups |
| THIN | 1 $\frac{1}{3}$ cups | " |
| MEDIUM | 2 " | " |
| MEDIUM HEAVY | 3 " | " |
| HEAVY | 4 " | " |
| VERY HEAVY | 6 " | " |

Bring to a boil, stirring only until sugar is dissolved. Keep hot but not boiling.

Many people think that a dash of salt emphasizes the sweetness in fruits. If you agree, add $\frac{1}{4}$ teaspoon salt to each quart of sirup.

When a choice of sirups is given the heavier one will, of course, give a more luscious product. The heaviest sirups are used only for very fancy packs.

SHALL I USE MY OVEN FOR CANNING?

The oven method of processing fruits is one that is used and liked by some experienced canners; those who have had good results with it will continue to use it. Other women who can get accurate instructions for the use of their particular oven may want to try it also.

Oven canning is one of the newer methods. Experimental work on it has been and is being done in many places. As yet there is no definite agreement as to what oven temperature to use, whether or not to preheat the oven, or the length of time required for processing. A few points have been established, however. They are:

1. The oven temperature should be held somewhere between 250° and 275° F.; lower temperatures slow down the heat penetration within the food, increasing the chances of leaving the bacteria unkilld; higher temperatures cause boiling over and loss of juice from the jars.

An oven used for canning fruit must have a heat control that has been checked for accuracy.

2. The fact that a control setting of 250° is being used does not mean that the food is hotter than in the water bath where the temperature registers 212° .

There is enough liquid surrounding the food in the jars to boil, and, as you know, boiling water never gets hotter than 212° F. unless it is restrained in a vessel that is strong enough to withstand steam pressure; glass jars are not. *Glass jars must be only partially sealed or there is danger of them bursting in the oven.*

3. Jars surrounded by air heat through more slowly than those immersed in water. Consequently a much longer processing time must be used in the oven than in the water bath. Just how much longer is a point that hasn't been agreed upon. *The lowest estimate is that it takes at least $1\frac{1}{2}$*

times as long. Other advocates of the method use from 1 hour to 1¼ hours for all fruits.

Anyone considering using the oven method for the first time should get specific directions especially prepared for her own oven, or follow the method that has been used successfully by reliable persons under conditions very much like her own.

WHAT ABOUT OPEN KETTLE CANNING?

(Open kettle canning is the oldest method of all. Many women who learned the art of canning this way in their mothers' kitchens still use it. To them the ease of following a method they know so well is ample reason for sticking to it, in spite of its disadvantages which are: first, the necessity for thoroughly sterilizing jars, rubbers, covers and canning tools; second, the danger of introducing new bacteria into the food during the process of handling and filling jars; and third, the chance that all parts of the food being canned may not reach the temperature at which bacteria are killed.)

Unless you are an old hand at this method you will be wise to limit your use of it to the making of pickles, jams, jellies and preserves—foods which contain enough acid or sugar to make super-careful handling unnecessary. But if you do use it, be sure to observe the following precautions:

1. Wash and sterilize all jars, rubbers, covers, spoons, tongs, spatulas and funnels which will come in contact with the food.

2. Be sure every bit of the food has reached the boiling temperature, and fill each jar to the brim with food or juice as rapidly as possible.

3. Run a spatula down the inside of the jar to remove air. Remove foam and add enough more boiling juice to fill the jar again to the brim.

4. Seal completely at once.



HOW TO CAN TOMATOES

The hot pack way—This is the most practical method for general use. Tomatoes put up in this way may be opened, heated, seasoned and served. Or they may be chilled, strained and served as tomato juice. And of course they may be used in any recipe calling for canned tomatoes. Here is the method, step by step:

1. Assemble and test jars and covers.
2. Put rack in water bath canner half filled with water, and put on to boil. Put filled teakettle on to boil, too.
3. Wash and rinse jars. Keep hot in water bath.
4. Fill a large kettle $\frac{3}{4}$ full of water and put on to boil for scalding tomatoes. Have a second large kettle or bowl ready to fill with cold water.
5. Grade the tomatoes for ripeness so they will cook uniformly.
6. Wash enough tomatoes for a canner load—remember, 3 pounds for a quart.
7. Put a few tomatoes into a large strainer, French-frying basket or square of thin cloth (cheesecloth or a sugar or salt bag). Dip into boiling water and hold there for 30 seconds if quite ripe, 60 seconds if firm. Plunge into cold water for a few seconds to cool tomatoes enough to handle.

8. Peel, cut out hard stem ends and any blemishes. Watch out for worms.

9. Cut tomatoes in halves or quarters and put into kettle to cook. Do not add water.

10. Bring tomatoes to a boil. Ladle at once into clean hot jars and add $\frac{1}{2}$ to 1 teaspoon salt to each quart.

11. Run a narrow spatula around the inside of jar to remove air bubbles.

12. Wipe sealing surface clean, using a clean cloth.

13. Adjust cap and partially seal (see pages 18-19).

14. Replace jars in canner as fast as filled.

15. Add boiling water to canner from teakettle until water rises an inch above the tops of the jars.

16. As soon as water boils put on cover and start counting time. Keep water boiling for 5 minutes.

17. Remove one at a time. Complete seal immediately.

18. Cool in upright position out of any draft.

19. When cool test for leakage; label and store.

The cold pack way—This is the method to use for tomatoes that you want to serve whole. Select firm tomatoes, not so large that they won't slip easily into jars.

1. Wash and cut up a number of ripe tomatoes without peeling, simmer until soft and put through a sieve or press. Use this juice in Step 4 to fill the jars of whole tomatoes.

2. Scald and peel firm tomatoes as for hot packing.

3. Slip whole tomatoes into the jars, squeezing them in until they fit closely together but do not burst. Add $\frac{1}{2}$ to 1 teaspoon salt to each quart.

4. Fill jars to within $\frac{1}{4}$ inch of top with the juice prepared in Step 1.

5. Put on cap, partially seal and process in the water bath for 45 minutes.

6. Complete seal, cool and store.

HOW TO CAN JUICES

There are three methods for canning fruit and tomato juices. Here they are for you to take your choice.

Water bath—this is the safest method.

1. Pour hot prepared juice into clean hot jars. Fill to within $\frac{1}{4}$ inch of top.

2. Put on covers and partially seal.

3. Process in water bath for 5 minutes.

4. Complete the seal.

Pasteurization—this preserves more of the fresh flavor.

1. Assemble and *sterilize* jars or bottles; soda-pop or similar bottles may be used if standard crown caps will fit and you have a capping machine. Pour boiling water over caps.

2. Heat prepared juice to required temperature (see page 41) in a kettle or top of double boiler. Use a thermometer.

3. Set each jar or bottle in a pan while filling (to catch overflow). Use a funnel. Fill container to brim.

4. With a spoon remove and discard any foam that rises; add juice to fill jar again to the brim.

5. Put on cover or cap and seal completely.

6. Put jars or bottles into water bath canner; stand upright if canner is deep enough, if not lay on their sides.

7. Completely cover jars or bottles with hot water.

8. With a thermometer in the water bath, heat water to the temperature called for in the recipe and hold at that temperature for the required time.

9. Remove jars from water bath. Cool.

Open kettle—this is the quickest and easiest method.

1. Bring prepared juice to the boiling point.

2. Pour boiling hot into hot *sterilized* jars or bottles. Fill to the brim. Remove foam and add more juice as needed.

3. Put on caps or covers that have been dipped in boiling water. Seal completely.

To Make Tomato Juice

Use fully ripe tomatoes. Wash, cut out stem ends and blemishes and cut into pieces. Do not peel. Simmer over low heat until soft; for best flavor do not boil. Put through a sieve or press fine enough to remove seeds. Add salt to taste. Complete as directed on page 40.

For pasteurization heat juice to 170° - 180° F. before filling jars and process at 180° - 190° F. for 25 minutes.

To Make Grape Juice

Wash, stem and crush grapes. Put into kettle and add barely enough water to cover. Simmer until seeds are free—do not boil. Strain through double cheesecloth or jelly bag. Sweeten to taste. Reheat and can as directed on page 40.

For pasteurization, heat juice to 160° - 170° F. before filling jars and process at 170° - 180° F. for 20 minutes.

Note: If juice is to be used for future jelly, the fruit should be boiled before the juice is strained out of it, and no sugar should be added.

Berry and Cherry Juices

The juices of cherries and berries such as raspberries, blackberries, loganberries and boysenberries make delicious beverages.

To prepare them, wash and crush the fruit, then bring slowly to the simmering point and simmer until soft. Strain through a double thickness of cheesecloth or jelly bag. Sweeten. Reheat and can by one of the methods on page 40.

For pasteurization, heat juice to 160° - 170° F. before filling jars and process at 170° - 180° F. for 20 minutes.

Note: If juice is to be used for future jelly, boil fruit before extracting juice and do not sweeten.

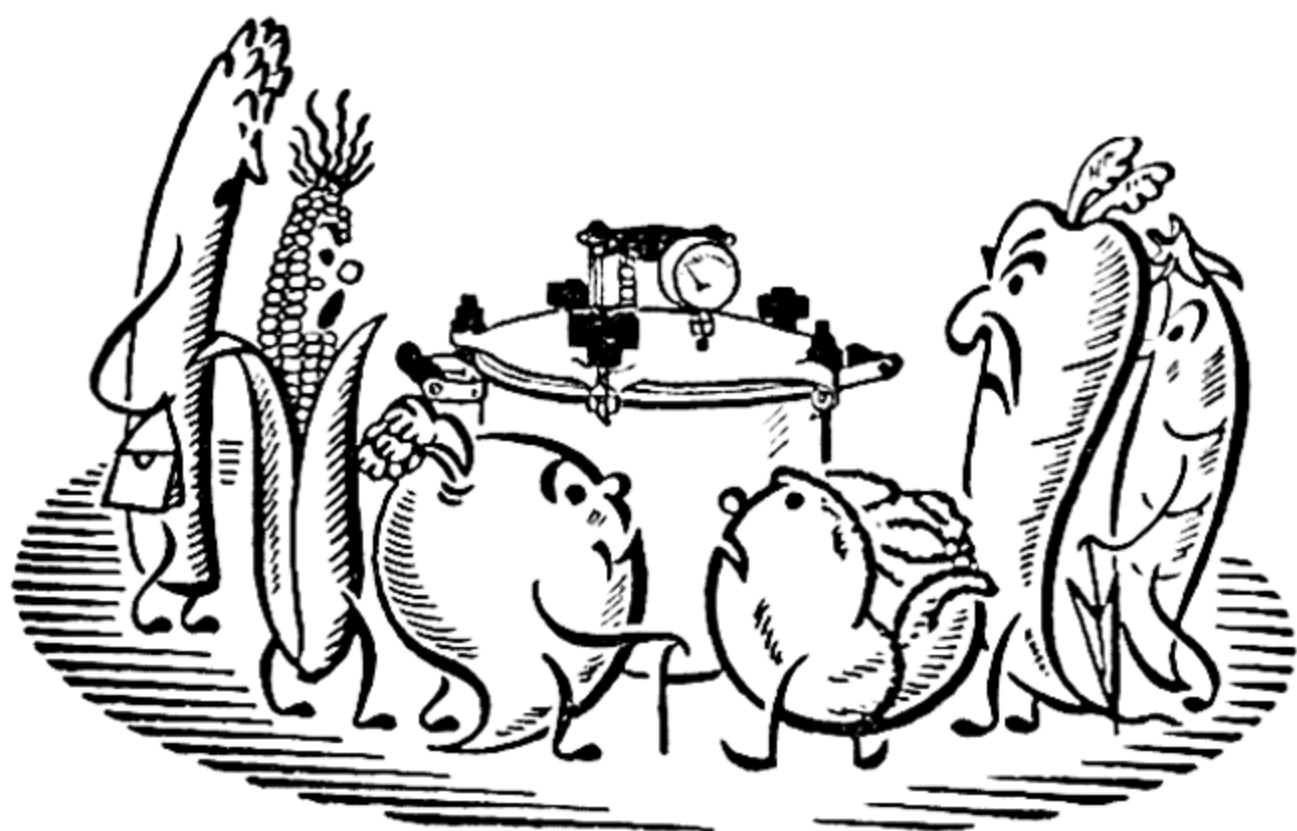
Grapefruit Juice

People who live where grapefruit is plentiful may want to can the juice.

Use firm, ripe fruit. Wash and cut small fruit in halves, large fruit in lengthwise quarters. Squeeze out the juice, being careful not to press any oil from the peel. Strain through wire strainer or wide mesh cheesecloth.

This is the way juice is canned in Florida. Heat juice over hot water to 170° F. Sweeten if you wish. Pour into sterilized jars to within 1/8 inch of the brim. Seal completely. Place jars on their sides in warm water (120° F.) in water bath canner; do not let jars touch and have water at least 2 inches over the jars. Allow to stand until water and jars are cool. Remove, label and store in a cool, dark place.

This is the way juice is canned in Arizona. Heat juice over hot water to 180° F. Sweeten if you wish. Fill sterilized jars or bottles to overflowing and process for 30 minutes at 180° F. Cool jars and wrap in paper for storage.



Chapter Four

ACCENT ON ACCURACY

FACE to face with the non-acid vegetables you know by now that they present certain canning difficulties. The bacteria that cling to them are tough; high temperatures are needed to destroy them. The surest, safest, quickest and—for the amateur—the only way to achieve this guaranty against spoilage is with the pressure cooker. If you can neither borrow one nor find a community canning group to join then use some other method of preserving such as drying, freezing, pit or cellar storage.

From here on, however, I'm going to take it for granted that there's a pressure cooker in your pantry just waiting for the call to canning. You may have been using it with great success, in which case your chief interest in this chapter will be an expert's curiosity about a favorite subject. If on the other hand you're still a novice a little awed by

clamps and gauge now is your opportunity to shed your fears and strike up a close acquaintance with a thoroughly useful appliance.

Here are the highlights of vegetable canning. It will ease your progress to take them to heart:

Memo to me

I MUST see that my pressure cooker is in good working order well in advance of the canning season (see page 57).

I'll process pint and quart jars in it, nothing larger. That's so the heat will penetrate to the center of the food in the time allotted to processing.

Again that warning about freshly picked produce!

Ideal schedule—2 hours from garden to jar. On no account longer than 8 hours.

Wash vegetables thoroughly. (But of course I'd do that.)

Vegetables are precooked before going into jars.

I'll operate my cooker exactly as the manufacturer directs. Originality has no place here.

To produce the high temperatures I want I must leave the petcock open for the full time specified. That's what exhausts the air.

Don't start counting processing time until pressure gauge registers the number of pounds given in table (see pages 54-55).

Never open the petcock until the gauge reads zero.

Note—Take no chances with home-canned vegetables that don't look or smell right when opened. Destroy them without even tasting.

Anyway I'm going to boil them for 5 to 10 minutes before tasting or serving. No botulinus poisoning for me or mine!



The other day a friend of mine from New Hampshire dropped in to see me. She told me she'd canned a thousand jars of fruits and vegetables last summer. When I exclaimed at the magnitude of her achievement she said: "It was perfectly easy. I have three pressure cookers and I can keep all of them going at once if I have to."

With her heartening example before you I hope you'll not think the twenty-one steps I'm outlining here are too tedious. It's all much simpler than it looks.

HOW TO CAN VEGETABLES

1. Get pressure cooker ready for action. Have the rack in place, the safety valve assembled and the petcock *open*.
2. Wash jars in hot soapy water, rinse thoroughly and keep in hot water until you're ready to fill them.
3. Put a teakettle of water on to boil.
4. Wash and prepare enough of the vegetable to fill a cookerful of jars—no more. (See page 53.)
5. Put vegetable in a cooking pot, add boiling water. Cook for the length of time specified on pages 49-52.
6. While vegetable boils, put water about an inch deep into the pressure cooker and start it heating.
7. Fill jars with the boiling vegetable—add enough boiling water to fill each jar to within $\frac{1}{4}$ inch of the top.
8. Run a spatula around inside of jar to release air.

9. Wipe sealing surface of jars clean, using a clean cloth.
10. Put on caps and partially seal (see pages 18-19).
11. Put jars into cooker, arranging them so that no jar touches another or the sides of the cooker. Water must circulate freely around them.
12. Put cooker lid on and tighten clamps as directed by the manufacturer of your cooker.
13. Turn heat on full. When steam starts to pour from the petcock note time and leave petcock open for 7 to 10 minutes longer to allow all air to be exhausted (driven out) from the cooker.
14. Then close petcock and keep a close watch on the pressure gauge until it registers the required pressure (see pages 54-55). This should take at least 10 minutes.
15. Lower the heat to stop further rise in pressure. *Notice time and start counting processing period from this moment.* Keep an eye on the gauge, and increase or decrease heat as necessary to maintain the correct pressure.
16. At end of processing time, turn heat off or move cooker to a cool dry surface. Allow cooker to cool until the gauge registers zero—then wait a minute or two longer before opening the petcock. Opening the petcock too soon, or cooling the cooker too fast, draws liquid out of the jars.
17. Open petcock slowly. Release the clamps and remove the cover, tipping it away from you to protect yourself from steam.
18. Remove jars one at a time and complete the seal immediately.
19. If you want to can a second cookerful prepare the vegetable and precook it while the first batch is being processed.
20. When jars are cool test for leakage (see page 24).
21. Label if needed and store in a cool, dark place.

Now that you've gained confidence in your ability to deal with a pressure cooker we'll have to double back on our tracks and talk about the things you're going to put into it. By this time no doubt you know your family's likes and dislikes by heart and can save yourself the thankless job of doing up things which they'll spurn in that discouraging way families have. But if you're in any doubt ask them; almost everybody loves to talk about food past, present or future. Practical as the next few pages are I confess I've found myself getting hungry every time I've worked on them. It's even fun to can on paper.

In brief tables I've tried to tell you how you can know when vegetables are right for canning, how you go about preparing them, how you process them. And tucked in with them you'll find a little list about "yields"—that is, what quantity of a fresh vegetable you need to give you a quart jar of canned food.

HOW TO CHOOSE VEGETABLES FOR CANNING

ASPARAGUS Asparagus stalks should be green for the greater part of their length, the white butts are woody. Choose firm stalks that are tender enough to be brittle.

*BEANS,
LIMA* Only tender young beans should be canned. Pods should be well filled and a fresh dark green in color. The shelled beans should be well formed, tender and clear green or greenish white in color.

*BEANS,
SNAP
(green or wax)* Select young stringless beans with round or flat pods. They should be clean and fresh looking and snap readily when bent.

*BEANS,
SOY*

Use soybeans when they are in the tender shell bean stage.

BEETS

Only young beets should be canned. Mature ones can be stored successfully in cellar or pit. Beets for canning whole should be no larger than 1½ inches in diameter.

CARROTS

Only young carrots should be canned. Mature ones may be stored. Carrots should be fresh and bright colored.

CORN

Corn for canning should be freshly gathered. Kernels should be well formed, plump and milky. The husk should be fresh and green.

GREENS

Use only tender young greens with few damaged leaves or coarse stalks. Leaves should be bright and unwilted.

OKRA

Choose young tender pods, 2 to 4 inches long. They should snap easily when bent.

PEAS

Pods should be bright green, well filled and fresh in appearance. Avoid puffy pods with tiny peas. The shelled peas should be bright green and tender.

PUMPKIN

Pumpkin is difficult to can but is nice to have when the stored supply is gone. Small pie pumpkins are often sweeter and of a finer texture than larger varieties. Pumpkin for canning should be firm and well ripened with a rather hard skin.

SWEET POTATOES

These may be stored successfully in cellar or pit so canning should be reserved for those injured in digging or for the season when the stored supply is gone.

Note: Vegetables that are strong in flavor—broccoli, brussels sprouts, cabbage, cauliflower, green peppers, kale, kohlrabi, turnips and parsnips—are so changed in canning that they are not liked by most people.

HOW TO PREPARE VEGETABLES

Also see pages 54-55 for processing time table

ASPARAGUS

Wash, trim off the coarse lower scales and woody butts. Put stalks of a similar size together.

To can whole asparagus tie stalks together in bunches of about 20 of uniform length. Stand bunches upright in deep pan and add enough boiling water to come $\frac{2}{3}$ of the way up on the stalks. Cover pan and boil for 3 minutes. Pack into hot quart jars, standing stalks upright. Add 1 teaspoon salt to each jar and cover with cooking water. *To can in pieces* cut stalks into $\frac{1}{2}$ or 1 inch lengths. Cover with boiling water and cook for 3 minutes. Pack into hot pint or quart jars, add $\frac{1}{2}$ teaspoon salt to each pint or 1 teaspoon to each quart, cover with cooking water.

BEANS, LIMA

Shell and wash beans. Cover with boiling water and boil for 3 minutes. Pack into hot jars, add 1 teaspoon salt to each quart and cover with cooking water.

**BEANS,
SNAP***(green or wax)*

Wash, trim off ends and any blemished parts. Cut into pieces or leave whole. Cover with boiling water and boil for 3 to 5 minutes. Pack into hot jars, add 1 teaspoon salt to each quart and cover with cooking water.

**BEANS,
SOY**

Shell and wash beans. Cover with boiling water and let stand 3 or 4 minutes. Drain. Pack into hot jars, add 1 teaspoon salt to each quart and cover with fresh boiling water.

**BEETS,
young**

Cut off tops leaving 1 inch of stems; leave roots on. Wash. Cover with boiling water and let simmer for 15 or 20 minutes or until skins slip easily. Plunge into cold water and leave until beets can be handled. Skin and trim off remaining stems. Leave whole or cut up as desired. Pack into hot jars and cover with fresh boiling water. Omit salt as it is apt to make beets fade. One tablespoon vinegar to each quart helps to keep color bright.

**CARROTS,
young**

Scrub carrots with a vegetable brush, scrape if you wish. Cover with boiling water and boil for 3 minutes. Pack into hot jars. Or put washed carrots into boiling water and simmer for 15 minutes, until the skins slip easily. Put into cold water to cool, skin and pack into hot jars. In either case add 1 teaspoon salt to each quart and fill jars with cooking water or for a milder flavor with fresh boiling water.

GIRLS COL

BRINAGAR

NO

CORN

Corn is one of the most difficult vegetables to can. Work with small quantities and lose no time in getting it canned. Remove husk and silks from ears of corn, trim off any wormy parts.

For cream style corn cut tops of kernels off with a sharp knife, then scrape the cob with the back of the knife.

For whole kernel corn cut deeply enough to remove kernels but not deeply enough to cut into the cob. Do not scrape cob. Barely cover either cream style or whole kernel corn with boiling water, add 1 teaspoon salt for each quart of corn and quickly heat to boiling. Pack immediately into hot *pint* jars. Heat penetrates corn slowly so do not use quart jars. Leave $\frac{1}{2}$ inch of head space.

GREENS,

Beet

Chard

Dandelion

Spinach

Wash carefully through several waters. Remove coarse stems or poor leaves. Cover with hot (not boiling) water and simmer for 5 minutes. Pack *lightly* into *pint* jars. Add $\frac{1}{2}$ teaspoon salt to each jar and cover with cooking water.

OKRA

Wash, cut off caps, cover with cold water and bring to a boil. Pack into hot jars, add 1 teaspoon salt to each quart and cover with cooking water.

PEAS

Shell, wash, cover with hot water and simmer for 5 minutes. Pack into hot *pint* jars leaving $\frac{1}{2}$ inch head space. Add $\frac{1}{2}$ teaspoon salt to each *pint* and cover with cooking water.

PUMPKIN
or
SQUASH

Wash, cut open and remove seeds. Peel and cut into 1 inch cubes. Steam for 15 minutes either in a regular steamer or in a tightly covered pan over low heat with a small amount of added water. Steamed pumpkin may be put through a colander but this is not necessary. Pack loosely in jars—pint size preferably, add $\frac{1}{2}$ teaspoon salt to each pint or 1 teaspoon to each quart.

If canned in pieces cover with cooking water or fresh boiling water.

SWEET
POTATOES

Scrub with a brush and boil as for serving until the skins slip easily. Peel quickly, cut into pieces and pack into hot jars. Add 1 teaspoon salt to each quart and cover with boiling water.

VEGETABLE
SOUP
MIXTURES

Any desired combination of vegetables may be canned for use as mixed vegetables or in soup. Some popular mixtures:

1. Three parts tomato and one part each of corn, lima beans and okra.

2. Equal parts of carrots, spinach and celery.

3. Equal parts of carrots, snap beans, peas, corn and celery.

Prepare vegetables as for canning individually. Mix, heat to boiling with water added if necessary. Season as desired with salt, pepper, parsley or other spices or herbs. Pack into hot jars and cover with cooking water or fresh boiling water.

CAN I USE A PRESSURE SAUCEPAN?

Pressure saucepans, as of course you know, are small models of pressure cookers built for everyday cooking. Because exact pressures are not as important in cooking as they are in canning these saucepans do not boast gauges. Instead they are equipped with some sort of simple device that announces when pressures have been reached.

In the regular pressure cooker you can control temperatures accurately. In the pressure saucepan you can't and there in a nutshell is its limitation as a canning instrument. It does however produce higher temperatures than the water bath and if you own one of the larger sized saucepans you can use it for processing a very few pint jars of food.

Try to keep the heat steady and use the same processing periods that you would for a pressure cooker. Cool the saucepan slowly and do not remove the weight from the steam outlet for at least 5 minutes after the indicator shows pressure reduced to zero; this is to allow the pressure within the jars to be reduced too.

TO MAKE A QUART OF CANNED VEGETABLE

| <i>Fresh Vegetable</i> | <i>Am't Needed</i> |
|--------------------------|--------------------|
| <i>Asparagus</i> | 2½-3 pounds |
| <i>Beans, lima</i> | 4-5 pounds |
| <i>Beans, snap</i> | 1½-2 pounds |
| (green or wax) | |
| <i>Beets</i> | 2½-3 pounds |
| <i>Corn</i> | 10-12 medium ears |
| (cut from cob) | |
| <i>Greens</i> | 2-3 pounds |
| <i>Peas</i> | 2½-3 pounds |

Only approximate amounts can be given since products vary with variety, season and amount of wastage.

HOW LONG TO PROCESS VEGETABLES

in Pressure Cooker in Water Bath**

| Product | Pint | | Quart | | At Boiling Temperatures hours |
|-----------------------------|------------------------|------------------------|------------------------|------------------------|-------------------------------------|
| | 10 pounds* pressure | 15 pounds* pressure | 10 pounds* pressure | 15 pounds* pressure | |
| Asparagus | 30 | | 35 | | 3 |
| Beans | | | | | |
| Fresh lima | 50 | | 55 | | 3½ |
| Snap | 30 | | 35 | | 3 |
| Soybeans | 80 | | 90 | | 3½ |
| Beets, baby | 30 | | 35 | | 2½ |
| Carrots | 30 | | 35 | | 2½ |
| Corn | | | | | |
| Whole kernel | 60 | | | | 3½ |
| Cream style | | 75 | | | 4 |
| Greens | | 60 | | | 3½ |
| Okra | 35 | | 40 | | 3 |
| Peas, green | 45 | | | | 3½ |
| Pumpkin or squash | | 60 | | 75 | 3½ |
| Sweet potatoes | 95 | | 120 | | 3½ |

| | | | | |
|-------------------------|----|--|----|---------------|
| <i>Vegetable Soup</i> | | | | |
| <i>Mixture</i> | 60 | | 70 | 3 |
| <i>Beets, pickled</i> | | | | $\frac{1}{2}$ |
| <i>packed hot</i> | | | | $\frac{1}{2}$ |
| <i>Sauerkraut,</i> | | | | |
| <i>packed hot</i> | | | | |

• At altitudes higher than 2,000 feet add $\frac{1}{2}$ pound pressure for each 1,000 feet. Example: At 3,000 feet process asparagus at $10\frac{1}{2}$ pounds pressure, at 4,000 feet use 11 pounds pressure.

** See page 58.

LIFE WITH A PRESSURE COOKER

Perhaps you're one of the people who isn't interested in knowing "reasons why" and if you are you can skip the next few paragraphs without hurting anybody's feelings. But if you happen to have been wondering why the water bath canner and the pressure cooker do two such different jobs the explanation is very simple.

In an ordinary cooking kettle the escaping steam cools the water and keeps it from ever getting hotter than 212° F. The water bath cooker has no trouble in reaching this temperature at sea level and there the water obligingly stays.

In the pressure cooker however we clamp the lid on, close the petcock and bottle up the steam. Thus imprisoned the steam creates a pressure which causes the water to get hotter and hotter. (I almost said "madder and madder".) If all the air has been exhausted at the beginning—as it should have been—the temperature within the cooker will have climbed to 240° to 250° F. by the time the gauge on the lid registers 10 to 15 pounds. It is these higher temperatures that are the deadly enemies of the bacteria in non-acid foods.

Those of you who live an appreciable distance above sea level are familiar with the fact that in your house water comes to a boil at lower temperatures than it does for your friends on the plains. Therefore to get the high temperatures that *you* need you'll have to increase the pressures in your cooker beyond those the sea-level folks use. So add $\frac{1}{2}$ pound pressure for every thousand feet of altitude after the first two thousand (see pages 54-55).

Treat It Kindly

If a pressure cooker is to work accurately—and its advantages are lost if it doesn't—it must be treated like any other fine machine.

Cleanliness is the first precept. After each using you'll want to wash and rinse yours thoroughly. Cookers that are made of aluminum thrive on scourings with metal pads or other aluminum cleaners. Tinned-steel kettles or the newer enamelled ones should never be scoured; any abrasive material is apt to damage their surface. Wash them instead with soap and water. Tinned cookers must be scrupulously dried to prevent rusting; enamelled ones must be guarded against sharp blows which would chip them.

No warping, please—The sealing surface (where lid and cooker meet) must be kept clean and smooth. To protect your cooker from warping don't pour water into it while it is hot and dry. Wrapping the cooker in wet towels, as I have seen some women do in order to reduce the pressure quickly, will in time almost certainly warp the metal. And do, I beg you, let your cooker cool thoroughly before you put it into water.

Hats off—Think of the lid as your cooker's best hat. You'd never dream of dumping your own in the dishpan, would you? To be sure the gauge isn't made of flowers or a bit of fine ribbon but it's just as delicate and water will inevitably injure it. So (when you clean the lid, loosen the petcocks and safety valve, then get one of your husband's pipe cleaners and run it back and forth through the openings. If the safety valve is the ball and spring type, wipe the socket clean and polish the ball frequently with silver or cream metal polish. Occasionally put a drop of light oil on the threads of the petcock or safety valve) (In some cookers the petcock and safety valve are combined.)

Protecting your investment—It is a good plan to have an expert mechanic check your pressure gauge at the beginning of each canning season to see that it is registering accurately. Manufacturers will check their own gauges if they are removed, carefully packed and sent back to the

factory. State agricultural colleges or county home demonstration agents are often able and willing to do it too.

If your cooker has a safety valve of the ball and spring type take it off at the end of the canning season, tie it in a cloth bag and fasten it to a handle of the kettle.

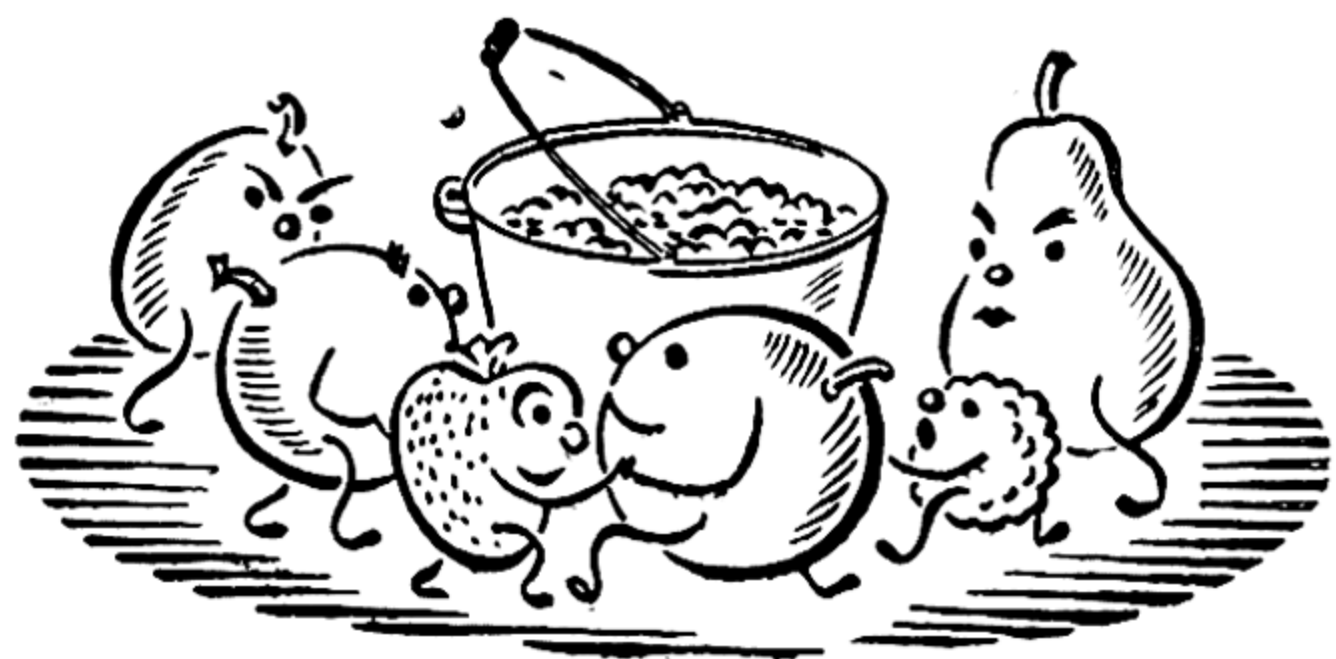
While your cooker is stored keep the lid flat on a shelf if you can find space. If you can't then leave the lid ajar. Don't under any circumstances put the cooker away tight shut.

FOR AND AGAINST THE WATER BATH

While it is true that some women process all kinds of vegetables in the water bath and do it successfully, the fact remains that the bacteria which hide out in non-acid vegetables die hard and may cause really dangerous spoilage unless destroyed. Against the temperatures of the water bath they can hold out for a long time. To be sure of their complete destruction it is necessary to process the vegetables for hours—which adds nothing to their flavor!

If you decide to use this method for canning non-acid vegetables you must realize what the chances are and be absolutely cautious every step of the way. The freshness of your product, the speed with which you get it into the water bath and conscientiousness about the timing are of the utmost importance. The rule of 20 per cent. additional time for each 1,000 feet of altitude holds true here too.

Finally you must on no account fail to boil all water bath canned vegetables 5 to 10 minutes before they are tasted.



Chapter Five

THE WHOLE JAM FAMILY

JAM with its sisters and its cousins and its aunts is the glamor family of the dining-table. In this chapter you will find almost fifty recipes for jellies, conserves, marmalades, jams and fruit butters. Look them over carefully—they will make any meal more attractive, adding a fine fresh flavor here, a bright accent of color there. It's true they demand lots of sugar but though rationing may cramp your style it's also a challenge to your ingenuity.

So before making your final selection of recipes do some paper planning, weighing your family's tastes against the amount of sugar you can spare. Of course you will put up nothing just for show; your choices will all be made on the basis of what this or that preserve can do for you in wartime. If you can use it to glorify thrift desserts, leftover meats, hot unbuttered biscuits and toast or to make wholesome treats for the children's lunch boxes then it will have paid its way.

Here are a few general rules that apply to the doing up of all members of this variegated family:

Memo to me

It's the better part of wisdom to work with rather small quantities—I won't tackle more than 6 quarts of berries or 8 pounds of other fruit at a time.

Nothing hit-or-miss about this job—I must measure or weigh accurately all juice, fruit and sugar.

Use no utensils of iron or copper—they may color or flavor my product.

If I am pressed for time just when the fresh fruits are in season I can put up the juice or fruits *without sugar* and use them later for making jam, jelly or whatever.

I must rinse my jelly bag in boiling water before filling it with fruit to keep it from absorbing and wasting juice—and again afterwards to sterilize it and prevent mold from growing on it.

For clearest jelly I'll let the bag drip dry—not squeeze it. Remaining juice and pulp can be used to make fruit butter or for second extraction jelly (see page 84).

Note: Use wide, deep pans for cooking as they permit faster evaporation.

If my cooking kettle or pan has a lip it will be easier to pour the hot mixture into glasses or jars. If I must use a ladle I'll work quickly so as not to cool the mixture.

Important: Use sterilized glasses or jars (see page 19).

Store jellies, jams and their relatives in a cool dark place.

WHAT ABOUT SUGAR?

This seems to be the place to pause and size up the sugar situation. Just what can be done about it in times of shortage? I think it may take some paper and pencil work to figure out exactly what use you prefer to make of your own

supply but I don't see any good reason why you should abandon your plans altogether. Here are my reasons:

For jelly you will need from $\frac{2}{3}$ to 1 cup of sugar for each cup of juice. Jams, conserves, preserves and marmalades require about the same—from $\frac{3}{4}$ to 1 pound of sugar for each pound of prepared fruit. Fruit butters call for less, approximately 1 cup of sugar to each 2 cups of pulp.

The higher the percentage of pectin in a juice or fruit, the more sugar it needs, but this is compensated for by the fact that you will have a greater number of filled glasses to put on your shelves. In jelly making it is especially important to keep the ratio between pectin and sugar correct, because if you use too much sugar you will wind up with a sirupy product, while if you scrimp on it your jelly will be tough. For the other members of this group the ratio is not so critical and the smaller amount called for may be used.

Some women replace part of the sugar a recipe calls for with either honey or corn sirup. Honey will add its own flavor to the product while corn sirup will cut down on its sweetness. Either one increases cooking time slightly.

For any batches of the jam family you make without using commercial pectin it will be safe for you to replace $\frac{1}{2}$ (or less) of the sugar with an equal amount of honey. Or you can replace $\frac{1}{4}$ (or less) of the sugar with an equal amount of corn sirup. But if you use a substitute watch your recipe! If it calls for a certain *weight* of sugar you must *weigh* the sirup or honey too. If it calls for sugar by the cup you must measure your sirup or honey by the cup also. Sugar is usually measured for jelly, weighed for jam or preserves.

If you want to use either honey or corn sirup in a recipe that calls for commercial pectin you must follow the definite instructions that come with the particular brand of pectin you are using.

OF COURSE YOU CAN MAKE FINE JELLY

In every art there are standards to be aimed for and certainly jelly-making is no exception. You'll have every reason to feel proud of yourself if the jelly you make is clear and sparkling, tender enough to quiver yet firm enough to hold its shape when you turn it out of the glass; yielding to the slightest pressure of the spoon but holding sharp, clean edges where it is cut.

Does that sound impossible for an amateur? Not at all. What other women are doing you can do and I know the next few pages will give you the confidence you need.

What Makes Jelly Set?

When you start to make jelly you will have three allies to help you. They are: sugar, acid, pectin. Fortunately most fruits have a good supply of natural acid; those that don't—for instance, very ripe apples and the firm meated grapes—can have a little lemon juice added to them. And since we can add or take away sugar as it is needed pectin turns out to be the only real problem child in jelly making.

Pectin is a substance which is found in fruits. Some fruits, such as apples and grapes, contain a lot of pectin and hence are relatively easy to convert into jelly. Others such as strawberries and pineapple contain very little pectin and so must be helped along, either by being combined with a fruit that contains plenty of natural pectin or by having commercial pectin added to them.

Commercial pectin in liquid or powdered form is a concentrate obtained by extracting the natural pectin from fruits which are full of it. Though it is especially helpful in the case of fruits that lack natural pectin it need not be limited to them. Many women use it with all fruits because it shortens the cooking time and insures good results.

The pectin content of any fruit decreases as the fruit ripens. Therefore, *unless you are using commercial pectin, you must include some fruit that is underripe in every batch of jelly you prepare.* To find out whether or not any given fruit juice is sufficiently rich in pectin to make jelly you can perform the following test:

The Pectin Test—Measure into a glass or cup 1 tablespoon of juice (without sugar) and add 1 tablespoon of alcohol—any kind—grain, denatured or wood. Stir gently.

If one large, firm mass of jelly is formed the juice contains all the pectin needed to make jelly.

If several softer pieces of jelly form the juice is shy of pectin and you had better combine it with a pectin-rich juice or use commercial pectin.

If only small flakes of jelly or none at all form the juice contains little or no pectin; in such cases by all means use commercial pectin.

Note: Do not eat the results of this test. Even if it doesn't poison you it will taste terrible. Throw it away.

Another way of finding out about the amount of pectin in a fruit is with a "jelmeter," a small gauge that registers the pectin content of the juice and also the amount of sugar that should be used with it.

The Jelly Test—Unless you are using prepared pectin you must use some method to discover when your fruit juice and sugar mixture has cooked long enough to turn to jelly when cold. Old hands at the jelly making game know at just what moment to snatch the kettle from the fire. Amateurs will have to use one of these tests:

a. The first and most reliable method is known as the "sheet" test. To make this test dip up a large spoonful of the boiling sirup and hold it about a foot above the kettle. Tip the spoon so that its contents can run over the side of the spoon back into the kettle. Early in the cooking period

the sirup will flow from the spoon like water, indicating that more cooking is necessary. A little later on the sirup will flow from the spoon in two streams. At the finish, when the jelly is done, the last two drops in the spoon will flatten out and run together, forming a thin triangular sheet which will drop from the spoon as though the sheet were breaking at the edge of the spoon. Make the test frequently during the cooking and remove the mixture from the heat as soon as the jelly is done.



Jelly is not quite done



Jelly has reached the jelling point

b. An old-fashioned method is the "saucer test." Put a couple of teaspoons of the mixture onto a clean saucer and cool it as quickly as possible. If this sample assumes the consistency you want the cooking is done. (You had better move the kettle from the heat while you make the test to avoid the chance of overcooking.) If the sample remains a liquid pour it back into the kettle and cook it longer.

Making Jelly the "Long Boil" Way

Now I must urge you to learn the following steps almost by heart so that when you begin the actual work of jelly making you will move along without worry or needless bustle. The first step, as you will see, differs slightly for hard and soft fruits; after that they are treated in exactly the same way.

1—*Hard fruits*—Cut such fruits as apples, quinces and crabapples into quarters or eighths. Do not remove peels

or cores as they contain the most pectin. Put in saucepan; add enough water barely to cover fruit. Bring to a boil and boil gently till fruit is tender. Or

Soft fruits—Place juicy fruits such as berries and grapes in a saucepan and crush slightly. Add only enough water to start them cooking, about $\frac{1}{4}$ cup for each quart of fruit. Bring to a boil slowly and cook gently until most of the juice has run out of the pulp. At this point much of the color will have faded from the pulp.

2—Put cooked fruit into jelly bag (see page 8) and let juice drip into a pan or bowl.

3—Measure out juice and proper amount of sugar (see individual recipes pages 66-68). For best results work with small amount of juice at one time—only 6 or 8 cups.

4—Pour juice into broad saucepan that provides ample room for the jelly to boil up. Bring juice to vigorous boil before adding sugar. Add sugar and stir until dissolved.

5—Cook the mixture rapidly until the jelling point has been reached, testing frequently (see pages 63-64)—about 10 to 15 minutes. Remove immediately from heat.

6—Skim off any foam and pour immediately into sterilized glasses (see page 19), holding the pan close to the glass to avoid incorporating air bubbles. Fill the glasses to within $\frac{1}{8}$ inch of top; the jelly shrinks as it cools.

7—Pour a thin layer of melted paraffin over the surface of jelly (see page 82).

8—Cool thoroughly; put on covers; label; store in cool place.

Making Jelly the "Short Boil" Way

To make jelly by this method you use prepared pectin. Explicit directions come with each bottle or package that you buy and you can count on excellent results if you follow the instructions carefully.

And now for our recipes. You'll find many old favorites among them as well as a number of novelties.

Old Favorites

Here are brief directions for making jelly from the familiar fruits; for more complete details turn back to page 65. **Apple**—Use tart underripe apples. Wash and slice, discarding any blemished parts but do not core or peel. Add water barely to cover—about 1 cup for each pound of apples. Cook covered until soft and strain through jelly bag. Use $\frac{3}{4}$ cup sugar to each cup of juice.

Blackberry—Use a mixture of ripe and underripe fruit. Wash and crush. Unless very juicy add $\frac{1}{4}$ cup water for each quart of berries. Cook covered for 10 to 15 minutes and strain through jelly bag. Use $\frac{3}{4}$ to 1 cup sugar to each cup of juice. If berries are all ripe follow commercial pectin method.

Crabapple—Prepare as for apples. Use 1 cup sugar to each cup of juice.

Currant—Wash and crush currants; it is not necessary to stem them. Unless very juicy add $\frac{1}{4}$ cup water for each quart of fruit. Cook covered for 10 to 15 minutes and strain through jelly bag. Use $\frac{3}{4}$ to 1 cup sugar to each cup of juice.

Gooseberry—Use underripe gooseberries. Wash and add just enough water to cover. Cook covered 10 to 15 minutes and strain through jelly bag. Use 1 cup sugar to each cup of juice.

Grape—Use a mixture of ripe and underripe grapes. Wash, stem and crush. Unless very juicy add $\frac{1}{4}$ cup water for each quart of fruit. Cook covered for about 15 minutes and strain through jelly bag. If grape juice is allowed to stand overnight the tartrate crystals will collect on the bottom and sides of container; the juice can then be dipped out

leaving the crystals behind. If crystals are not removed from the juice they will make the jelly gritty. Use $\frac{3}{4}$ to 1 cup sugar to each cup of juice.

Plum—Use wild plums or cultivated varieties known to have enough pectin for jelly; if in doubt follow commercial pectin method. Wash plums and cover with water. Cook covered for about 20 minutes and strain through jelly bag. Use $\frac{3}{4}$ to 1 cup sugar to each cup of juice.

Quince—Wash and slice, discarding any blemished parts but do not peel or core. Add 2 cups of water for each pound of fruit and cook covered for 30 minutes or until soft. Strain through jelly bag. Use $\frac{3}{4}$ cup sugar to each cup of juice.

New-Fashioned Combinations

(Use "long boil" method)

| <i>Juices to be combined</i> | | <i>Sugar required</i> |
|------------------------------|--------|-----------------------|
| Currant, | 2 cups | } 4 cups |
| Red Raspberry, | 2 cups | |
| Currant, | 2 cups | } 3 cups |
| Strawberry, | 2 cups | |
| Plum, | 2 cups | } 4 cups |
| Crabapple, | 2 cups | |
| Apple, | 3 cups | } 3 cups |
| Pineapple, | 1 cup | |
| Crabapple, | 2 cups | } 3 cups |
| Rhubarb, | 2 cups | |
| Cranberry, | 2 cups | } 3 cups |
| Quince, | 2 cups | |
| Crabapple, | 2 cups | } 3 cups |
| Cherry, | 2 cups | |

Mint Jelly

| | |
|--------------------------------------|--|
| Spearmint leaves and stems, 1 cup | Sugar, $3\frac{1}{2}$ cups |
| Cider vinegar, $\frac{1}{2}$ cup | Green food coloring |
| Water, 1 cup | Liquid fruit pectin, $\frac{1}{2}$ bottle |

Wash spearmint, measure into 3-quart saucepan and press with potato masher or glass. Add vinegar, water and sugar and mix. Bring to a boil over high heat. While mixture is coming to a boil add coloring. When it boils, add pectin, stirring constantly. Then bring to a full rolling boil and boil hard $\frac{1}{2}$ minute. Remove from heat and skim. Strain into hot sterilized glasses. Makes about 5 glasses.

Spiced Jelly

Make apple jelly. When almost done add 2 or 3 rose geranium leaves or a stick of cinnamon to the boiling jelly. Remove leaves or cinnamon before pouring into glasses.

Cranberry—Orange Jelly

| | |
|---|--|
| Sugar, $3\frac{1}{2}$ cups | Orange juice, strained, $1\frac{1}{2}$ cups |
| Cranberry juice, canned, $1\frac{1}{2}$ cups | Powdered fruit pectin, 1 package |

Measure sugar and set aside until needed. Measure juices into a 3- to 4-quart saucepan and place over high heat. Add powdered fruit pectin, mix well and continue stirring until mixture comes to a hard boil. At once pour in sugar, stirring constantly. Continue stirring, bringing again to a *full rolling boil* and boil hard $\frac{1}{2}$ minute. Remove from heat, skim, pour quickly into hot sterilized glasses. Makes about 7 glasses.

JAMS FOR BREAKFAST, LUNCH AND SUPPER

Jam is like soft jelly except that it contains the pulp as well as the juice of the fruit. The fruit is crushed before it is cooked and in the finished product should be evenly distributed throughout the surrounding jelly. Though jam is not supposed to hold its shape it should not be runny or sirupy, a condition which is avoided when the fruit contains sufficient natural pectin. As was the case with jellies, jams can also be made with commercial pectins.

Favorite fruits for jam are apricots, berries of all kinds, peaches, pears and plums.

How to Make Jam

1. Prepare fruit according to recipe you are following. Preparation consists of washing the fruit and peeling, stemming or pitting as necessary. Then fruit is crushed. Hard fruit needs to be cooked soft before crushing.

2. Weigh or measure fruit and put into large kettle (with water if called for).

3. Weigh or measure sugar and add to fruit.

4. Heat slowly until sugar is completely dissolved, stirring frequently but gently to prevent scorching.

5. Then increase heat and boil until mixture is clear and rather thick. This will take from 10 to 20 minutes. If there is not too much pulp present you can use the sheet test to determine when jam is done. Otherwise use the saucer test (see page 64).

6. Skim if necessary. If you have a nice cool storage space, pour jam immediately into hot sterilized and drained jars, cover with hot melted paraffin and put on lid (see page 82). Otherwise pour into jars and seal completely as you would canned fruit.

Red Raspberry-Cherry Jam

| | |
|--|---|
| Sour cherries, prepared, 4 cups (2 pounds) | Sugar, $5\frac{1}{2}$ cups ($2\frac{1}{2}$ pounds) |
| Red raspberries, 4 cups ($1\frac{1}{4}$ pounds) | Salt, $\frac{1}{2}$ teaspoon |

Wash and pit about 2 quarts ripe cherries. Put through food chopper, using coarse knife. Pick over and wash fully ripe raspberries. Drain. Weigh or measure each into large preserving kettle. Bring slowly to a boil and simmer, covered, about 10 minutes, or until cherries are tender, stirring occasionally.

Add sugar and salt. Mix well. Cook slowly until mixture boils, stirring only until sugar is dissolved. Boil rapidly about 15 minutes, or until mixture is clear and somewhat thick, stirring frequently to prevent scorching. Skim.

Pour into hot, sterilized jars or glasses. Makes about 8 glasses.

Grape-Pear Jam

| | |
|--|--|
| Concord grapes, prepared, 12 cups ($4\frac{1}{2}$ pounds) | Sugar, 6 cups ($2\frac{3}{4}$ pounds) |
| Pears, prepared, 6 cups (2 pounds) | Salt, $\frac{1}{2}$ teaspoon |

Wash and stem about 5 pounds slightly underripe grapes. Weigh or measure into large preserving kettle. Crush.

Bring slowly to a boil and simmer, covered, about 5 minutes, or until soft, stirring frequently. Rub through coarse sieve into large kettle.

Wash and pare about $3\frac{1}{2}$ pounds firm, ripe pears. Cut into quarters, remove cores and cut crosswise in thin slices. Weigh or measure.

Add pears, sugar and salt to grape pulp. Mix carefully.

Cook slowly until mixture boils, stirring only until sugar is dissolved. Boil rapidly about 10 minutes, or until pears are clear and desired consistency is reached, stirring frequently to prevent scorching. Skim.

Pour into hot, sterilized jars or glasses. Makes about 11 glasses.

Tomato-Carrot Jam

| | |
|---|--------------------------|
| Tomatoes, prepared, 12 cups (6 pounds) | Sugar, 7 cups (3 pounds) |
| Carrots, prepared, 3½ cups (1 pound) | Salt, 1 teaspoon |
| | Cinnamon, 2 sticks |
| | Whole cloves, 1 teaspoon |

Place tomatoes and carrots in kettle and cook, covered, until tomatoes are tender, stirring occasionally. Add sugar, salt and spices tied in a cheesecloth bag, and cook until thick and transparent. Pour into hot, sterilized jars or glasses. Makes about 11 glasses.

Dried Apricot-Pineapple Jam

| | |
|----------------------------|-------------------------|
| Apricots, dried, 2 cups | Lemon, thinly sliced, ½ |
| Pineapple, crushed, 2 cups | Sugar, 4 cups |

Wash apricots. Cover with cold water and soak overnight. Simmer, covered, until tender in water in which they were soaked. Add pineapple, lemon and sugar. Simmer, stirring frequently until thick and clear. Pour into hot, sterilized jars or glasses. Makes about 7 glasses.

CONSERVES LIKE GRANDMOTHER'S

Conserves are like jams, except that they contain a mixture of fruits, often including orange or lemon peel, raisins or nuts. They are prepared and stored exactly like jams.

Grape-Peach Conserve

| | |
|---|---|
| Concord grapes, prepared, 10 cups (3 $\frac{3}{4}$ pounds) | Salt, $\frac{1}{2}$ teaspoon |
| Peaches, prepared, 3 cups (1 $\frac{1}{4}$ pounds) | Orange rind, grated, $\frac{3}{4}$ teaspoon |
| Water, $\frac{1}{2}$ cup | Nut meats, coarsely chopped, $\frac{3}{4}$ cup |
| Sugar, 4 $\frac{1}{2}$ cups (2 pounds) | |

Wash and stem about 4 pounds slightly underripe grapes. Weigh or measure into large preserving kettle. Crush. Bring slowly to a boil and simmer, covered, about 5 minutes, or until soft, stirring frequently.

Rub through coarse sieve. Wash and peel about 2 pounds firm, ripe peaches. Remove pits and cut lengthwise in thin slices. Weigh or measure into preserving kettle. Add water. Bring to a boil and simmer, covered, until tender.

Add grape pulp, sugar, salt and orange rind. Mix carefully. Cook slowly until mixture boils, stirring only until sugar is dissolved. Boil rapidly about 10 minutes, or until peaches are clear and desired consistency is reached, stirring frequently to prevent scorching. Skim. Add nuts and reheat to boiling. Pour into hot, sterilized jars or glasses. Makes about 6 half-pint jars or 8 glasses.

Strawberry-Rhubarb Conserve

| | |
|------------------------------------|-------------------------------|
| Strawberries, prepared, 1 quart | Rhubarb, prepared, 1 quart |
| Sugar, 6 cups | |

Wash and hull strawberries. Wash rhubarb and cut into $\frac{1}{2}$ -inch pieces, being careful not to form strings. Mix strawberries, rhubarb and sugar. Cook mixture slowly until it is thick and clear. Pour into hot, sterilized jars or glasses. Makes about 10 glasses.

Peach-Cantaloupe Conserve

| | |
|-------------------------------------|--------------------------------|
| Peaches, prepared, 1 pint | Sugar, 3 cups |
| Cantaloupe, prepared, 1 pint | English walnuts, blanched |
| Lemons, 2, juice and grated rind | and chopped, $\frac{2}{3}$ cup |

Wash and peel peaches and dice. Remove seeds from cantaloupe, pare and dice.

Combine all ingredients with exception of nut meats. Cook slowly until mixture boils. Boil rapidly until thick and clear; add nut meats and pour into hot sterilized jars or glasses. Makes about 5 glasses.

MARMALADES

Marmalades are similar to jams except that they are usually made of the larger harder fruits—more often than not of citrus varieties—and the fruit pieces are more evident in the finished product. Since the fruit is never crushed, marmalades have a more transparent appearance than jams. Their consistency may vary from that of a firm jelly to that of a soft jam, depending on the amount of pectin.

How to Make Marmalade

1. Prepare the fruit according to recipe you are following.
2. Boil in water until soft. Fruit sometimes toughens if started cooking in sirup.
3. Weigh or measure sugar and add to fruit.
4. Boil, stirring frequently, until mixture is thick and clear. The juice will often respond to the sheet test to let you know when the marmalade is done, but it is a good plan to augment this with the saucer test (see page 64).
5. Pour immediately into hot, sterilized and drained jars and seal like canned fruit (see pages 18-19) or pour on layer of melted paraffin, cool and cover (see page 82).

Orange Marmalade

| | |
|---------------------------|-----------------|
| Oranges, thin skinned, 12 | Water, 3 quarts |
| Lemons, 3 | Sugar |

Wash and peel oranges. Cut peel into thin slivers, pulp into chunks; slice lemons; add water. Let stand overnight.

Cook uncovered about 30 minutes or until peel is tender. Measure. Add from $\frac{2}{3}$ to 1 cup sugar to each cup fruit and juice, depending upon sourness of fruit. Cook slowly until mixture boils. Boil rapidly to jellying point. Pour into hot, sterilized jars or glasses.

Three-Fruit Honey Marmalade

| | |
|--|--|
| Grapefruit, sliced, $\frac{1}{2}$ pound (about $\frac{1}{2}$ large) | Lemon, sliced, 2 ounces (about $\frac{3}{4}$ small-sized) |
| Oranges, sliced, 1 pound (about 2 large) | Honey and sugar Salt, $\frac{1}{2}$ teaspoon |

Select fruit that is free from blemishes. Wash, cut grapefruit in eighths, oranges and lemon in quarters, lengthwise. Remove stem ends, coarse membrane and seeds. Cut in very thin slices. Weigh.

For each pound of prepared fruit add 3 pints of water. Cover and let stand overnight.

Cook slowly, uncovered, about 45 minutes, or until peel is very tender. Weigh.

For each pound of cooked fruit and liquid weigh $\frac{1}{2}$ pound of sugar and $\frac{1}{4}$ pound honey; keep each separate.

Add sugar and salt to fruit mixture. Mix well. Cook slowly until mixture boils. Boil rapidly about 15 minutes, stirring frequently and skimming as necessary.

Add honey and mix thoroughly. Bring to a full rolling boil and cook about 3 minutes longer. Skim. Pour into hot, sterilized jars or glasses. Makes about 10 glasses.

Carrot-Orange Marmalade

Oranges, 6

Water, 4 cups

Lemons, 4

Carrots, prepared, 6 cups

Sugar, 5 cups

Remove peel from oranges and 2 of the lemons and chop. Soak in water overnight and drain, saving water.

Cut oranges in small pieces; dice carrots or put through food chopper. Mix peel, chopped oranges and carrots and cook covered until tender with as little water as possible.

Add sugar and water in which peels were soaked and cook uncovered until thick and clear. Add juice of lemons, cook 5 minutes longer. Pour into hot sterilized jars or glasses. Makes about 9 glasses.

Quince-Apple Marmalade

Quinces, prepared, 6

Tart apples, prepared, 3

Sugar

Wash, core and chop the quinces and apples but keep them separate. Cover quince with water and cook covered until tender. Add apple and continue cooking 10 minutes longer. Measure. Add $\frac{3}{4}$ cup sugar for each cup fruit and juice. Cook slowly until mixture boils. Boil rapidly until mixture jellies when cooled on a saucer. Pour into hot sterilized jars or glasses.

PRESERVES

Preserves are fruits cooked either whole or in comparatively large pieces in a heavy sugar sirup. The fruit becomes translucent as it cooks but should retain its shape, and in the finished product will be surrounded by a clear thickened sirup. It is important to use fruit that is still firm and not overripe.

How to Make Preserves

1. Prepare fruit according to recipe you are following.
2. Weigh fruit, then weigh out correct proportion of sugar, using $\frac{3}{4}$ to 1 pound for each pound of fruit.
3. If you are using *tender juicy fruits* arrange the fruits and sugar in layers in the kettle, having bottom layer fruit and top one sugar. Let stand until juice is drawn out and starts rising to the top of the fruit. Then bring to a boil over low heat, stirring frequently (but gently) to prevent scorching.

Hard fruits such as pears and quinces should be started cooking in a thin sirup. As the mixture boils the fruit will grow tender and the sirup will cook down and thicken.

Juicy fruits with firm skins such as plums should be started cooking in heavy sirup. As the mixture boils the juice of the fruit will thin out the sirup but it will thicken up again later as the fruit cooks.

4. Cook until fruit is clear and sirup thickens.
5. For extra plumpness in the fruit let mixture stand overnight. In the morning bring back to a boil.
6. Pour at once into hot sterilized and drained jars and seal completely like canned fruit (see pages 18-19).

Note: Paraffining is not recommended for preserves because the sirup is likely to leak through the paraffin.

Old-Time Preserves

Apricot—Wash and peel large apricots and cut in halves or cut smaller ones in halves without peeling. Put in kettle with layers of sugar and let stand for several hours or overnight. Heat slowly, stirring until sugar is dissolved; then boil rapidly until sirup is thick and fruit clear.

Cherry—Wash and pit sour cherries. Combine sugar and fruit and let stand overnight. Heat slowly, stirring until

sugar is dissolved, then boil rapidly until sirup is thick.

Peach—Use peaches that are ripe but firm. Wash, peel, remove pits and cut into pieces. Put in kettle with layers of sugar and let stand several hours or overnight.

Heat slowly, stirring until sugar dissolves; then boil rapidly until sirup is thick and fruit clear.

Or make a sirup of the required amount of sugar and $\frac{1}{3}$ cup of water for each pound; add peaches and boil until sirup is thick and peaches clear.

Pear—Use firm ripe pears—winter varieties are good. Wash, pare, core and cut in slices. Make sirup of the required amount of sugar and $\frac{1}{3}$ cup water for each pound of sugar. Add pears and boil until they are clear.

Quince—Use fruit that is ripe but firm. Wash, pare, quarter and core. Make sirup with the required amount of sugar and 2 cups of water for each pound of sugar. Add fruit and cook slowly for 1 to $1\frac{1}{2}$ hours. Stir occasionally. Sirup will reach the jelly stage and the fruit will become clear and reddish in color.

Strawberry—Crush small and very ripe berries, heat and strain. Use this juice to make a sirup— $\frac{1}{4}$ cup of juice and 1 pound of sugar for each pound of berries. Wash, hull and drain large perfect berries, drop into sirup and simmer for 5 minutes, then boil rapidly for 10 minutes. Skim. Allow preserves to stand overnight. In the morning spoon into hot sterilized jars, filling each $\frac{3}{4}$ full. Boil the sirup until fairly thick, pour over berries and seal.

Tomato—Use small firm tomatoes, either red or yellow. Peel if you wish but tomatoes will hold their shape better if not peeled. For each pound of tomatoes combine $\frac{1}{2}$ lemon sliced thin, $\frac{3}{4}$ pound sugar, $\frac{3}{4}$ cup water, 1 stick cinnamon and a piece of ginger root; cook together for 10 minutes to make a sirup. Add tomatoes and boil until they are clear and sirup is thick.

Golden Apple Preserves

| | |
|----------------------------|--------------------------------|
| Orange, medium-sized, 1 | Sugar, $4\frac{1}{2}$ cups |
| Water, 5 cups | (2 pounds) |
| Apples, prepared, 2 quarts | Salt, $\frac{1}{2}$ teaspoon |
| (2 pounds) | Lemon juice, $\frac{1}{4}$ cup |

Wash orange, cut into eighths, remove seeds and all coarse membrane. Cut crosswise in thin slices. Place orange and $2\frac{1}{2}$ cups water in kettle and simmer, covered, about 30 minutes, or until peel is tender and most of the water has evaporated.

Wash and pare about 9 (3 pounds) firm, tart apples of uniform, medium size. Cut into eighths and carefully remove cores. Weigh or measure into large flat-bottomed preserving kettle. Add remaining water and simmer, covered, until almost tender.

Add orange, sugar and salt. Simmer 25 minutes, add lemon juice and simmer about 5 minutes longer, or until apples are clear and sirup sheets from a spoon. To prevent scorching and to glaze the apples, occasionally baste them by carefully tilting the kettle. Skim. Pack in hot, sterilized jars and seal at once. Makes about 6 half-pint jars.

Cherry-Mint Preserves

| | |
|---------------------------------------|------------------------------|
| Sour cherries, prepared, | Salt, $\frac{1}{4}$ teaspoon |
| 6 cups (3 pounds) | Mint leaves, finely chopped, |
| Water, $\frac{1}{2}$ cup | firmly packed, 3 table- |
| Sugar, $4\frac{1}{2}$ cups (2 pounds) | spoons |

Wash and pit about 3 quarts ripe cherries. Weigh or measure into large preserving kettle. Add water. Bring to a boil and simmer, covered, about 10 minutes, or until tender, stirring occasionally.

Add sugar and salt. Mix carefully, cook slowly until mix-

ture boils, stirring only until sugar is dissolved. Remove from heat, let stand 1 hour.

Reheat to boiling. Boil rapidly about 10 minutes, or until fruit is clear and sirup is somewhat thick, stirring frequently to prevent scorching. Skim. Add mint and reheat to boiling. Pour into hot, sterilized jars and seal at once. Makes about 4 half-pint jars.

FRUIT BUTTERS—THE FAMILY'S JOY

Fruit butters are thick, smooth spreads made from strained or sieved fruit pulp and sugar. They have a fine fruity flavor and don't require as large an amount of sugar as other spreads—a point to remember if your family likes sweet things and you've been wondering how to satisfy them. Because ground spices tend to darken the mixture it is often better to use whole spices tied in a square of cheesecloth and to remove them before pouring the butter into the jars. The old-fashioned apple butter recipe on page 81 is an exception to this rule; it cooks down to a rich dark color anyway so ground spices may be used.

How to Make Fruit Butters

1. Wash fruit and prepare according to specific recipe you are following.
2. Put into kettle and add just enough water to eliminate any danger of scorching. Firm fruits will require somewhat more water than soft ones.
3. Boil, stirring frequently, until soft.
4. Put through food press or sieve.
5. Measure and return to kettle.
6. Add half as much sugar as you have pulp and any spices or seasonings called for in recipe. Heat slowly, stirring constantly until sugar dissolves.

7. As soon as sugar has dissolved boil rapidly until mixture starts to thicken, then reduce heat to prevent scorching and stir constantly until mixture becomes very thick and looks clear.

8. Pour at once into hot sterilized and drained preserving jars and seal completely (see pages 18-19).

9. Label and store in a cool, dark place.

Note: It is not satisfactory to use paraffin as a covering for fruit butters because their low sugar content makes them comparatively liable to spoilage.

Favorite Fruit Butters

These next few lines tell how to prepare familiar fruits for butters. Once the fruit is prepared the process is the same so instead of repeating it so many times I'm asking you to turn back a page for the complete directions.

Apricot—Wash apricots and remove pits. Crush and add only enough water to start cooking. Cover, cook until soft. Put through press or sieve.

Crabapple—Wash and cut apples in pieces. Add water to cover. Cover, cook until soft and put through press or sieve.

Grape—Wash and stem grapes. Crush and cook covered in their own juice or with very little added water until soft. Put through press or sieve.

Peach—Wash, peel and pit peaches. Add only enough water to start cooking. Cover and cook until soft. Put through press or colander.

Pear—Wash and cut in pieces. Add half as much water as fruit and cook covered until soft. Put through press or sieve.

Plum—Wash plums, add half as much water as plums (less if very juicy) and cook covered until soft. Put through press or sieve.

Old-Fashioned Apple Butter

| | |
|-----------------------------|-----------------------------|
| Sweet cider, 1 gallon | Sugar, 8 cups |
| Apples, prepared, 4 gallons | Ground allspice, 1 teaspoon |
| | Ground cinnamon, 1 teaspoon |

Boil sweet cider until it is reduced one-half. While it boils pare, core and slice apples. Add apples to cider. Cook slowly, stirring frequently so as to prevent burning.

When it begins to thicken add the sugar and spices. Cook until it remains in a smooth mass when a little is cooled. Almost constant stirring is necessary to avoid scorching. Pour into hot sterilized jars and seal.

Cantaloupe-Plum Butter

| | |
|--------------------------------------|-------------------|
| Cantaloupes, large, ripe, about 2 | Sugar |
| Plums, ripe, about 3½ pounds | Corn sirup, light |
| | Salt, ½ teaspoon |

Wash and peel cantaloupes; remove seeds and stringy parts, dice, measure to make 8 cups (3 pounds). Wash and pit plums, measure to make 8 cups (3 pounds). Cook covered in large kettle about 30 minutes or until soft, stirring often. Remove from heat; rub through press or coarse sieve. (If pulp seems too thin you can cook it, stirring frequently, until thick enough to round up on the spoon. Cooking at this stage will save time later.)

Measure pulp into kettle; for each cup add ¼ cup sugar, ¼ cup corn sirup. Add salt, mix well.

Cook rapidly, stirring constantly to prevent scorching, until of desired thickness. (Small amount will thicken on cold saucer.)

Fill hot sterilized jars and seal at once. Makes about 7 half-pint jars.

HOW TO STORE THE JAM FAMILY

To prepare paraffin for covering jams, jellies and conserves, melt it in a double boiler or in a small pitcher placed in gently simmering water or in a saucepan over low heat. Be careful not to let it get so hot that it smokes. As soon as it is melted it is ready for use. If possible use fresh paraffin but in a pinch paraffin saved from last year's products can be re-used. Put it in a saucepan with more than its own volume of water. Bring it to a boil and keep it boiling gently for a few minutes after paraffin has melted. Set pan aside and when it has cooled lift the cake of paraffin off. It is then ready to be melted and used again.

There are two schools of thought on how paraffin should be applied. Use the method which suits your convenience.

Method 1. *To apply paraffin while fruit mixture is still hot:* As soon as the glasses are filled pour on a thin coating of melted paraffin. Let the glasses stand *undisturbed* until they are thoroughly cold and jelly or jam has set. Then add a second layer of melted paraffin, tipping and turning each glass so that the paraffin runs well up around the sides of the glass, forming a complete seal. This method affords the most complete protection for your food right from the start.

Method 2. *To apply paraffin after mixture is cold:* After filling glasses set them on a table or shelf where they can remain *undisturbed* while the product cools and sets. Protect them from dust by putting on their tin covers or spreading heavy clean paper over them. When the product is cold and firm pour on sufficient melted paraffin to form a layer at least $\frac{1}{8}$ inch thick and rotate each glass so that paraffin flows up the sides all the way around. This method gives you a chance to examine your product when it is cool. If it is too thin you can recook it.

Covering, Labeling and Storing—Standard jelly glasses come equipped with metal covers all ready to be put on after the paraffin has been applied. If you are using jars with screw tops which originally contained commercial food products such as mayonnaise, and you still have the caps by all means use them. The lids which have had to be pried from jars are not as good. Jars and glasses which have no lids to fit them may be covered with those special transparent covers which you can purchase in the house-furnishings shops or you can cut out circles of heavy paper and tie them down securely around the tops of the jars.

Label the jars and store them in a cool, dark, dry place if at all possible. However, they will keep satisfactorily for a reasonable length of time in almost any location which isn't too hot.

THRIFT TRICKS

I know a woman whose closet of preserved foods is the envy of all her friends. Yet as she often points out her large and varied supply has been accumulated at a smaller outlay than many of her neighbors' meager stocks. The reason is that she doesn't disdain to copy some thrifty practices that were common among homemakers when America was a frontier country. As a finale to this long chapter I'd like to tell you about them briefly:

Several of her most attractive specialties are made from wild fruits—fragrant tiny strawberries, tangy chokecherries, wild grapes. These fruits are tedious to gather but the children make a picnic of it and have their own allotment of the finished product to use as gifts.

She uses apples from her own orchard as the base for unusual jellies such as cinnamon, rose geranium, quince, pineapple and herb. Apples are marvelous stretchers; because they're plentiful and their flavor is bland they can

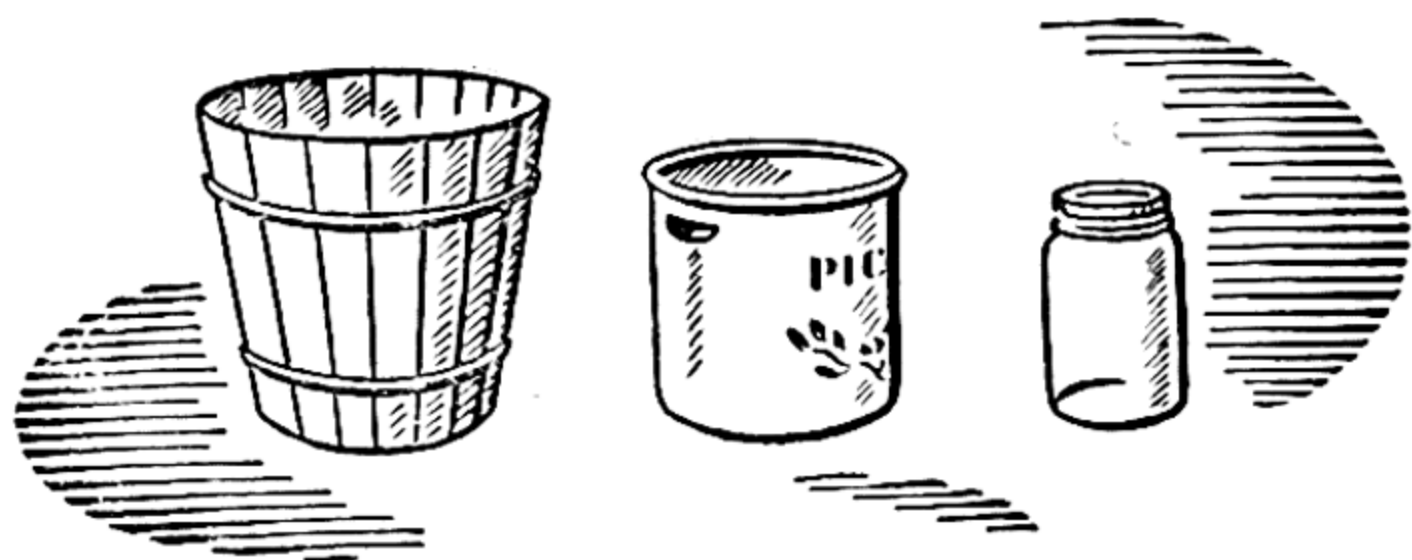
be successfully combined with more expensive and rarer fruits.

No Waste in Jelly Making

When she makes jelly of strawberries or grapes, she often uses the remaining pulp for jam or fruit butter. Because these fruits have so rich a flavor the loss of part of their juice doesn't seem to harm them.

And lastly she sometimes makes more than one extraction of juice from the same batch of jelly pulp. This scheme is most successful with pectin-rich fruits such as currants, crabapples and underripe grapes or when commercial pectin is used with full-flavored fruits. All she does is to return the pulp to the kettle after it has finished its first dripping, adding only enough water to cover it. Then she boils it gently for 15 or 20 minutes, using low heat or an asbestos mat under the kettle and stirring frequently to prevent scorching. The pulp then goes back into the jelly bag and is allowed to drip as before. The second extraction she either combines with the first or puts up separately for use in puddings or fruit punches.

Perhaps some of her ideas will appeal to you.



Chapter Six

WITH VINEGAR, SPICE AND SALT

HAVE you ever eaten in a restaurant that caters especially to men and noticed the number of relish and condiment bottles that kept flitting by in the hands of the waiters? Or watched the man opposite you in the dining car blanket his juicy steak with ketchup? Or for that matter observed the complete cheerfulness with which your own husband consumed a leftover when it was offered with your best spiced watermelon pickle?

That's why this chapter is dedicated to the Man-of-the-Family. From the standpoint of nutrition not much can be said for pickles, relishes and their multitudinous variations. But as accessories that give sparkle to plain and fancy meals they cannot be praised too highly.

In the following pages you'll find a wide variety of tried and true recipes ranging all the way from the aristocratic cherry olive to plebian sauerkraut. I hope there'll be many potential family favorites among them.

Sour Cucumber Pickles

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| Cucumbers, small uniform size, 6 quarts | Whole cloves, $\frac{1}{2}$ ounce ($2\frac{1}{2}$ tablespoons) |
| Water, $4\frac{1}{2}$ quarts | Cinnamon, 2 sticks |
| Salt, 2 cups | Mace, 1 blade |
| Whole allspice, $\frac{1}{2}$ ounce ($2\frac{1}{2}$ tablespoons) | Red pepper, 1 small pod |
| | Cider vinegar, 1 gallon |
| Sugar, 2 cups | |

Wash cucumbers, put in stone jar or bowl, cover with scalding hot brine, made from water and salt. Let stand overnight in brine. In the morning rinse and drain.

Tie the spices in a cheesecloth bag; steep spices in vinegar 45 minutes. Add sugar and simmer 15 minutes more. Add cucumbers, a few at a time, and boil 1 minute. Remove cucumbers and place in stone jar. When all have been heated, cover cucumbers in the jar with the hot spiced vinegar used for heating. Cover with an inverted plate and let stand 2 or 3 weeks.

Pack pickles into hot glass jars, cover with fresh, cool spiced vinegar and seal immediately. About 2 quarts of the spiced vinegar will be sufficient for the packing. Makes about 5 quarts.

Sweet Cucumber Pickles

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| Cucumbers, small uniform size, 6 quarts | Whole allspice, 1 ounce (5 tablespoons) |
| Water, $4\frac{1}{2}$ quarts | Mace, 1 blade |
| Salt, 2 cups | Cinnamon, 2 sticks |
| Sugar, 5 cups | White mustard seed, 2 tablespoons |
| Cider vinegar, 1 gallon | |

Wash cucumbers, put in stone jar or bowl, cover with scalding hot brine, made from water and salt. Let stand

overnight in brine. In the morning rinse and drain.

Dissolve 2 cups of the sugar in 3 quarts of the vinegar; add the spices; simmer 15 minutes. Add cucumbers, a few at a time, and boil 1 minute. Place in stone jar; add hot spiced vinegar and let stand overnight.

Next day drain off vinegar; combine remaining vinegar and sugar, bring to a boil and pour over the pickles. Let stand a week or more.

Remove spices, pack into hot glass jars and seal. Makes about 5 quarts.

Saccharine Pickles

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| Cucumbers, medium-sized, | Saccharine, 1 teaspoon |
| 7 quarts | Dry mustard, 4 tablespoons |
| Horse-radish, grated, $\frac{1}{4}$ cup | Salt, $\frac{1}{2}$ cup |
| Cider vinegar, 1 gallon | |

Wash cucumbers and pack into sterilized glass jars. Mix horse-radish, saccharine, mustard and salt and add to the vinegar. Pour over cucumbers in the jar and seal. Makes about 7 quarts.

Pickled Beets

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| Beets, small, 4 quarts | Whole allspice, 2 teaspoons |
| Cider vinegar, 3 cups | Cinnamon, 1 stick |
| Water, 2 cups | Whole cloves, $\frac{1}{2}$ teaspoon |
| Sugar, $2\frac{1}{2}$ cups | Salt, 1 teaspoon |

Cook the beets until just tender. Slip off skins.

Combine vinegar, water, sugar, spices and salt. Bring to a boil and simmer 15 minutes. Add the beets and simmer 5 minutes longer.

Pack the beets into hot sterilized jars. Bring the sirup to a boil, then pour over beets. If not enough to cover add hot vinegar. Seal immediately. Makes about 4 quarts.

French Green Tomato Pickles

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| Green tomatoes, prepared, 6 quarts (7 pounds) | Ground allspice, $1\frac{1}{2}$ teaspoons |
| Prepared onions, 6 cups ($1\frac{1}{2}$ pounds) | Ground cloves, $1\frac{1}{2}$ tea- spoons |
| Salt, $\frac{1}{2}$ cup | Ground cinnamon, $1\frac{1}{2}$ tea- spoons |
| Water, 1 cup | Ground ginger, $1\frac{1}{2}$ tea- spoons |
| Cider vinegar, 4 cups | Dry mustard, $2\frac{1}{2}$ teaspoons |
| Light brown sugar, firmly packed, $3\frac{1}{2}$ cups ($1\frac{3}{4}$ pounds) | Black pepper, $\frac{1}{2}$ teaspoon |
| Mustard seed, $\frac{1}{3}$ cup | |

Wash green tomatoes of uniform, medium size. Remove stem ends and cut in $\frac{1}{4}$ -inch slices. Wash and peel onions. Cut in $\frac{1}{4}$ -inch slices.

Arrange tomatoes and onions in layers in large bowl or crock, sprinkling each layer with salt. Cover and let stand overnight.

Drain, rinse and place in large kettle. Add water and vinegar. Bring to a boil and cook, covered, about 15 minutes.

Mix sugar, spices and mustard seed. Add to vegetables. Bring slowly to a boil, stirring only until sugar is dissolved. Cook about 15 minutes, stirring occasionally.

Pack into hot sterilized jars. Cover with boiling sirup and seal immediately. Makes about 6 pints.

Bread and Butter Pickles

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| Cucumbers, 1-inch in di- ameter, 30 | Ground ginger, 2 teaspoons |
| Onions, medium, 10 | Sugar, 4 cups |
| Salt, 4 tablespoons | Turmeric, 1 teaspoon |
| Cider vinegar, 5 cups | White mustard seed, 2 tea- spoons |
| Celery seed, 2 teaspoons | |

Slice cucumbers and onions, sprinkle with salt. Let stand one hour. Drain.

Mix the remaining ingredients and boil. Add cucumbers and onions and bring to boiling point. Simmer 10 minutes. Pack into hot sterilized jars and seal immediately. Makes about 8 pints.

Mixed Mustard Pickles

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| Green peppers, 3 | Salt, $1\frac{1}{2}$ cups |
| Sweet red peppers, 3 | Water, 3 quarts |
| Cauliflower, 2 small heads | Cider vinegar, 1 quart |
| Green tomatoes, 2 quarts | Dry mustard, $\frac{1}{3}$ cup |
| Celery, cut in $\frac{1}{2}$ -inch slices, 2 cups | Flour, $\frac{3}{4}$ cup |
| Small white pearl onions, 1 quart | Brown sugar, 4 cups |
| Tiny pickling cucumbers, 1 quart | Turmeric, 2 teaspoons |
| | Celery seed, 2 teaspoons |
| | Mustard seed, 1 tablespoon |

Wash the vegetables thoroughly. Cut the peppers in half, remove seeds and white portions and cut up in 1-inch cubes; break the cauliflower into flowerets; cut the tomatoes into quarters or eighths depending upon their size; peel the onions. Combine all the vegetables.

Make a brine of the salt and 2 quarts of the water; pour over the vegetables. Cover and let stand overnight.

Heat to the boiling point but do not boil. Drain.

Combine dry mustard, flour, sugar and turmeric; add a little of the remaining quart of water and mix to a smooth paste; slowly stir in the remaining water. Add vinegar and spices.

Bring to a boil and boil 5 minutes. Add the vegetable mixture and bring to a boil again.

Pack at once into hot sterilized jars. Seal immediately. Makes 10 to 12 pints.

Pepper Relish

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| Green peppers, chopped, $5\frac{1}{2}$ cups (about 1 dozen) | White onions, chopped, 2 cups (about 1 dozen) |
| Sweet red peppers, chopped, $5\frac{1}{2}$ cups (about 1 dozen) | Cider vinegar, 1 pint |
| | Sugar, $1\frac{1}{2}$ cups |
| | Salt, 3 tablespoons |

Wash the peppers and remove seeds and white portions; peel the onions. Chop peppers and onions fine. Combine and cover with boiling water. Let stand 10 minutes and drain.

Combine vinegar, sugar and salt; add the pepper mixture. Bring to a boil and boil gently 5 minutes.

Pour into hot sterilized jars and seal immediately. Makes about 5 pints.

Piccalilli

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| Green tomatoes, chopped, 10 cups (about 5 pounds) | Salt, $\frac{1}{2}$ cup |
| Sweet red peppers, 1 | Cider vinegar, 1 quart |
| Green peppers, 2 | Sugar, 2 cups |
| Onions, medium-sized, chopped, $3\frac{3}{4}$ cups (about 2 pounds) | Celery seed, 1 tablespoon |
| | Mustard seed, 2 tablespoons |
| | Horse-radish, 1 tablespoon |
| | Whole cloves, 1 teaspoon |

Wash the vegetables thoroughly. Chop or grind coarsely the tomatoes, red and green peppers and onions. Mix well with salt; cover and let stand overnight. Drain.

Combine vinegar, sugar and the spices tied in a cheesecloth bag; bring to a boil and add the drained vegetables.

Heat again to the boiling point but do not boil.

Pack into hot sterilized jars and seal immediately. Makes about 2 quarts.

Chow Chow

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| Cabbage, chopped, 4 quarts | Sugar, 5 cups |
| Onions, chopped, 2 quarts | Dry mustard, 4 tablespoons |
| Green peppers, chopped, 1 quart | Turmeric, 1 tablespoon |
| Red peppers, chopped, 1 quart | Ground ginger, 1 tablespoon |
| Green tomatoes, chopped, 2 quarts | Mustard seed, 4 tablespoons |
| Salt, $\frac{1}{2}$ cup | Celery seed, 3 tablespoons |
| | Mixed whole spices, 2 tablespoons |
| | Cider vinegar, 1 gallon |

Mix all vegetables with salt; cover and let stand overnight. Drain. Tie mixed spices in bag. Add sugar and spices to vinegar. Simmer until hot and well seasoned. Remove spice bag. Pack into hot sterilized jars and seal immediately. Makes 12 pints.

Ketchup

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| Ripe tomatoes, 10 pounds | Ground mustard, 1 teaspoon |
| Onions, 3 pounds | Celery seed, 1 teaspoon |
| Sweet red peppers, 2 | Salt, 1 tablespoon |
| Cider vinegar, 1 cup | Whole allspice, 1 teaspoon |
| Sugar, $\frac{3}{4}$ cup | Whole cloves, 1 teaspoon |
| Paprika, 2 teaspoons | Cinnamon, 3 sticks |

Wash vegetables, slice tomatoes and onions and remove seeds from peppers. Cook vegetables covered for about 30 minutes, then press through a fine sieve.

Boil the pulp rapidly for about 30 minutes or until somewhat thickened. Add the remaining ingredients after tying the allspice, cloves and cinnamon in a piece of cheesecloth. Boil until thickened, stirring frequently.

Fill sterilized bottles and put on sterilized caps, or seal in hot sterilized jars. Store in a dark cool place. Makes about 3 to 4 pints.

Chili Sauce

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| Ripe tomatoes, peeled and chopped, 4 quarts | Sugar, 2 cups |
| White onions, finely ground, 3 cups | Salt, 2 tablespoons |
| Green pepper, finely ground, 1 cup | Cayenne, $\frac{1}{4}$ teaspoon |
| Sweet red pepper, finely ground, 1 cup | Whole cloves, 1 tablespoon |
| | Whole cinnamon, 3 sticks |
| | Mustard seed, 1 tablespoon |
| | Cider vinegar, 3 cups |

Wash vegetables thoroughly before preparing. Remove seeds and white portions from peppers before chopping.

Combine vegetables, sugar, salt and cayenne, place over low heat and stir until sugar is dissolved. Cook slowly, stirring occasionally for about 2 hours or until the mixture thickens.

Add spices tied in a square of cheesecloth and vinegar. Cook until very thick.

Pour into hot sterilized jars and seal immediately. Makes about 5 pints.

Watermelon Pickles

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| Rind of a watermelon | Sugar, 6 cups |
| Salt, $\frac{1}{2}$ cup | Whole allspice, 3 tablespoons |
| Cold water, 3 quarts | Whole cloves, 3 tablespoons |
| Boiling water, $1\frac{1}{2}$ quarts | Whole cinnamon, 5 sticks |
| Cider vinegar, 3 cups | Peel of 1 lemon |

To prepare watermelon rind remove all pink meat and green skin from the rind of a firm melon, preferably underripe. Cut in 1-inch cubes and measure. There should be 4 quarts.

Prepare a brine of salt and cold water. Pour over the prepared watermelon rind. Cover and let stand overnight.

Drain and rinse with fresh water. Cover with fresh water and bring to boil. Simmer until tender—about 10 minutes. Drain.

Combine boiling water, vinegar, sugar, spices and lemon peel. Bring to a boil. Add the watermelon. Bring again to a boil and cook gently until the rind is clear and transparent—about 45 minutes.

Pour into hot sterilized jars and seal immediately. Makes 4 to 5 pints.

Note: If a very crisp pickled rind is desired soak the rind in lime water instead of salt water. Prepare lime water by dissolving $2\frac{1}{2}$ tablespoons of slaked lime, purchased at drug store, in 3 quarts of cold water.

Spiced Fruits

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| Sugar, 10 cups (5 pounds) | Whole cloves, 2 tablespoons |
| Cider vinegar, 6 cups | Whole mace, 1 teaspoon |
| Water, 2 cups | Lemons, 3 |
| Cinnamon sticks, 6 | Desired fruit |

Boil sugar, vinegar and water about 10 minutes. Add spices and lemons sliced thin, tied in a cheesecloth bag.

Cool sirup, add fruit and bring to a boil. Remove from stove, cover and let stand overnight. In the morning place fruit and sirup in sterilized jars, seal partially and process 5 minutes in hot water bath. Complete the seal.

Apricots: Use firm whole fruit; do not peel.

Crabapples: Wash and remove only blossom end. Small sweet apples may be treated in the same manner.

Peaches: Choose firm peaches; dip in hot water, then in cold; peel.

Pears: Remove skins and blossom ends, retaining stems. If large, cut in halves or quarters lengthwise; core; if small use them whole. If pears are very hard parboil until they begin to get tender, drain and add to sirup.

Cherry Olives

Place fresh Royal Anne cherries in pint jars and pour over them $\frac{1}{2}$ tablespoon salt and 2 tablespoons vinegar to each pint. Fill jars with cold water. Seal. Allow several weeks before using.

SAUERKRAUT

If your family likes sauerkraut it's your chance for a minor hobby. It's cheap and easy to make and you can do it by the slow or the quick method.

When you make kraut you use just enough salt to draw the juice from the cabbage. The juice ferments and the acid thus created helps to preserve and flavor the kraut. I wonder if this is where the slang expression "to stew in its own juice" started!

Making Sauerkraut—Standard Method

Wash and scald the keg or crock to be used. A crock of 1 gallon capacity is needed for each 10 pounds of shredded vegetable. If a wooden keg is used wash it thoroughly, let it dry and paint the interior with melted paraffin before filling.

Select solid well matured heads of cabbage. Allow to stand for a day so cabbage will wilt slightly and be easier to cut. Remove the soiled outside leaves, wash and weigh cabbage. Cut heads into halves or quarters without removing cores; the core makes a good handle during cutting. Shred with a kraut cutter with blade set to cut shreds about the thickness of a dime, or shred with a sharp knife.

Weigh out $\frac{1}{4}$ pound medium coarse cooking salt for each 10 pounds of cabbage.

Put 1 to 2 pounds of shredded cabbage at a time into the crock or keg, sprinkle with salt and tamp down lightly

with a wooden potato masher or milk bottle. *Do not pound* or you will bruise the cabbage.

When container is filled cover with a clean white cloth. Over the cloth place a heavy plate, turned upside down, or a board cut to fit fairly loosely inside the container. If board is used paint it with paraffin.

To weigh down the board put a glass jar on it and pour water into it until the juice shows just above the edge of the cover.

Keep the container at ordinary room temperature. Remove the cloth daily for washing and boiling, replacing it with a clean one. Keep the weight adjusted by adding or removing water as needed to keep the cabbage covered with juice.

When the bubbles stop rising fermentation is complete. Transfer the kraut to a cold room for storage. If you have no cold storage place pack kraut lightly in clean glass jars and process for 30 minutes in a water bath.

Making Sauerkraut—Quick Method

This method is convenient when you have only a small quantity of cabbage with which to cope—as for instance when a head bursts in the garden. You get a less flavorful product than you do when you follow the slower process but to offset that disadvantage you won't have the odor of kraut-in-the-making around for such a long time.

Prepare and shred the cabbage as for regular kraut. Allow 1 pound of cabbage for each pint jar or 2 pounds for each quart jar to be filled.

For every 5 pounds of prepared cabbage weigh out 2 ounces ($3\frac{1}{2}$ tablespoons) of medium coarse cooking salt.

Mix salt and cabbage together. Pack mixture firmly into jars and partially seal. Set jars in pans to catch any juice that bubbles over.

Keep the jars as near 70° F. as possible for 5 days. Fermentation will take place and enough juice will be extracted to cover the cabbage.

At the end of 5 days completely seal the jars and store in a cool dark place. It will be ready for use in about 6 weeks.

How to Cook Kraut

Cook kraut in its own juice in a covered saucepan; or drain it and add $\frac{1}{2}$ cup fresh water to each pint of kraut. Cook for 20 to 30 minutes. Season with bacon drippings or celery seed.

Sauerkraut is most often served with frankfurters or spareribs.

PRESERVING WITH DRY SALT

If you have your own vegetable garden you may want to put down some of your surplus vegetables with dry salt. It is not quite as good a method as canning or drying or storing in cellar and pit because the loss of minerals and vitamins is greater. But it is a perfectly sensible way of augmenting your main supply.

Beans, corn and greens are the vegetables most people prefer to salt and once salted they cannot be used until they have been "freshened"—about which I'll tell you in a minute.

The right proportion of salt is important. Use good medium coarse cooking salt—the kind that comes in bags.

Stone crocks are good containers for rather large amounts; half gallon glass jars which cannot be sealed well enough for canning are useful for smaller quantities.

Steps in Dry Salting

1. Wash and scald the container.
2. Weigh the prepared vegetable.

3. Weigh out one-fourth as much salt as you have vegetable.

4. Sprinkle a little of the salt in the bottom of a crock or wide-mouthed jar, add a layer of vegetable about 1 inch deep and sprinkle with salt. Repeat until all the vegetable is used, finishing with salt on top. Take care to see that the salt is sprinkled evenly throughout. (If you prefer, the vegetable and salt may be thoroughly mixed together in a bowl or pan before they are put into the container.)

5. With a potato masher or slender bottle press the vegetable down firmly but avoid bruising or crushing it.

6. Place on top of the vegetable a clean cloth and an inverted plate or a paraffined board cut to fit inside the container. Neither plate nor board must fit too tightly, for the brine as it forms in the container must be able to rise up around the plate or board. Besides, a board is pretty sure to swell and you do want to be able to get it out without trouble.

7. Weight the cover by placing on top of it a jar or bottle and pouring into it water or pebbles until the brine rises over the vegetable. If not enough liquid is formed to do this make a brine solution using $\frac{1}{2}$ pound of salt to a quart of water and add it to the container until the vegetable is covered.

8. Put container in a cool place until vegetables are needed. They are ready for use at any time.

Salted Corn

Husk and remove the silk. Precook ears of corn in boiling water for 5 to 6 minutes, timing from moment water returns to a boil after corn has been added to it. Remove from water and cool to the point where ears are comfortable to handle. Cut kernels from cobs with a sharp

knife. Do not scrape the cob. Proceed with salting according to general directions.

If the corn develops any tendency to mold as time goes on spoon out the moldy part and transfer the remainder to pint or quart jars and seal them cold.

Salted Snap Beans

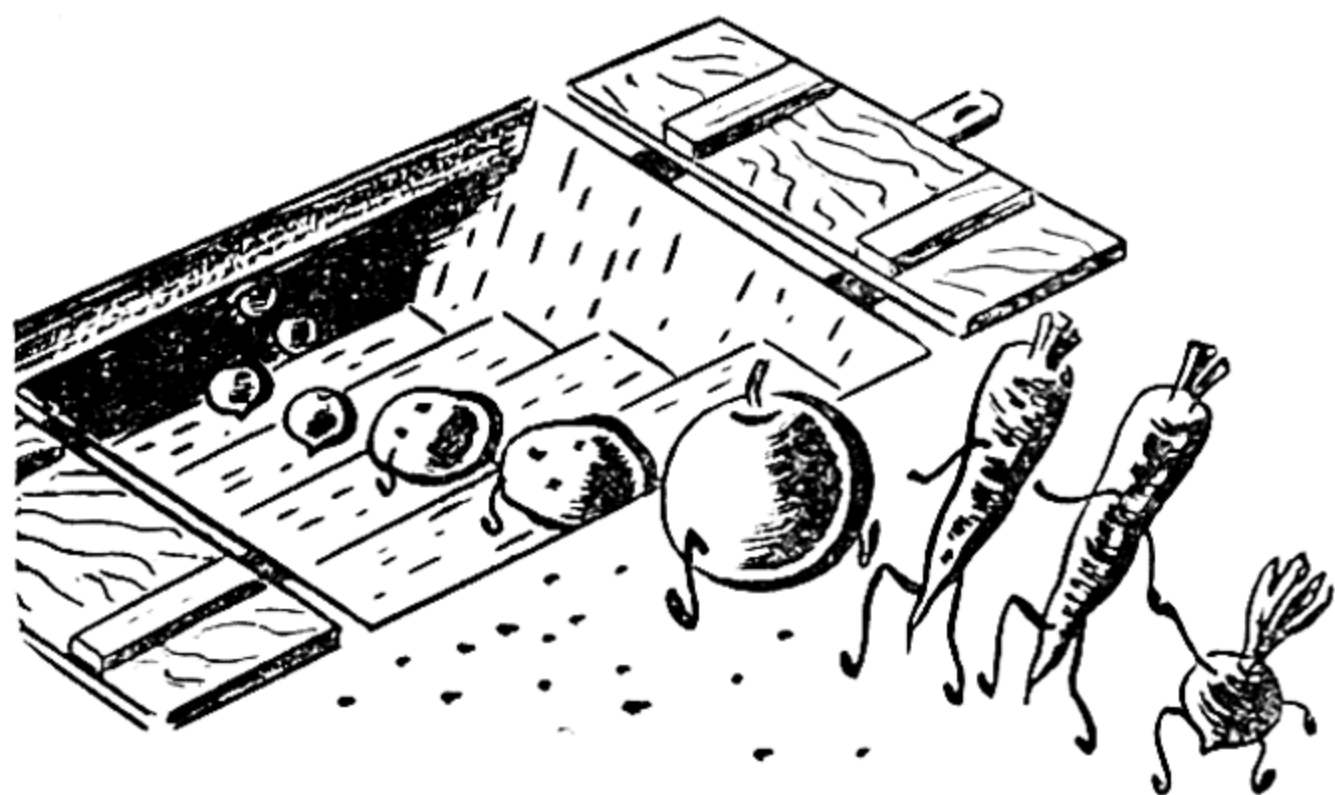
Wash beans, trim off ends and blemished parts. Beans may be left whole or cut in pieces. Proceed with salting according to general directions.

Salted Greens

Spinach, chard, beet tops or dandelion greens may be used. Wash and drain thoroughly; remove coarser stems and any damaged leaves. Leave greens whole or cut coarsely with a sharp knife or scissors. Proceed with salting according to general directions.

How to Cook Salted Vegetables

Rinse the vegetable under running water and then cover with cold water; let stand for several hours or overnight. Pour off the soaking water and rinse again. To freshen in a shorter time change the water several times over a period of 2 hours. Cook and serve as you would the fresh vegetable.



Chapter Seven

THEY DIG IN FOR THE WINTER

THIS is all about the techniques of extending the season for fresh fruits and vegetables by bedding down in cellar, pit or ground those hardier varieties that can "take it." Though it's a method that leaves apartment dwellers out in the cold it is worth considering if you happen to be the fortunate possessor of a country or a city cellar. Because this method of preserving food is short on costs (no jars, no fuel) and long on saving work I heartily recommend it to anyone who has the proper storage facilities.

If you have read this far in the saga of food preservation you've learned that fruits and vegetables to be worth saving must be in prime condition, the cream of the garden, so to speak. And now I must mention it again but with extra sidelights that apply to this type of storage:

Memo to me

IF I want vegetables for pit or cellar storage they'd better be planted late—just in time to get ripe, but not too ripe, before frost.

I'll save the choicest specimens for storage. Beets, carrots, onions, parsnips, potatoes (sweet and white), salsify, turnips and cabbage store well. So do pears, apples, pumpkins.

Note: I must dig root vegetables in dry weather so that they will be reasonably free of dirt—and leave at least one inch of stems when cutting tops off . . . it prevents scars through which decay can enter. Store apples, pears, pumpkins and squash with their stems on.

Important: Choose uniform size fruits and vegetables and reject any that are bruised or blemished.

SHALL I STORE IN CELLAR, PIT OR GROUND?

Your choice of a storage place will depend, of course, on the climate in which you live and the facilities at hand. In very cold sections, for example, extra precautions against freezing have to be taken, while in warm climates the problem is to keep temperatures low enough to prevent decay from getting a start. In excessively dry areas it may be necessary to increase the moisture in the air of the storage compartment; in humid localities some method of eliminating excessive moisture will have to be worked out.

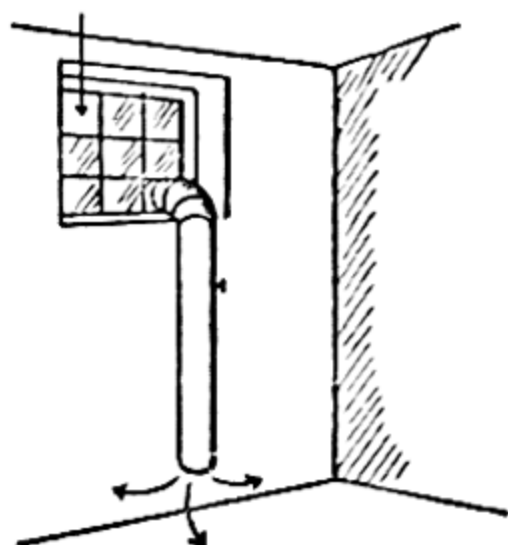
Because of these variables I cannot give you a set of step-by-step rules as I did in the canning chapters. But I can chart out the general course to be taken and if you will fill out the details with advice from a neighbor who is accustomed to storing fruits and vegetables you should have no trouble. If you cannot find a local expert to consult

write to your state agricultural college for help. The authorities there will gladly supply you with recommendations geared to your local conditions.

THE CASE FOR THE CELLAR

For storing large quantities of vegetables one of the old-fashioned outdoor walk-in cellars or "caves" is best. But most of us don't need that much storage space nor do we relish the idea of going out in rain and snow to get our vegetables for dinner. For these reasons the cellar of your house or of a connected shed is better.

Ventilation—In a cellar the fruit and vegetable storage room must be dark, and heavy or insulated walls should separate it from the furnace area. It will need a window or vent to keep the air fresh. Simple as it is the flue illustrated will do a competent job of "air conditioning" for its fruit and vegetable tenants. It is made of a length of stovepipe which ends about six inches above the floor. The outer end is fitted into the lowest pane of the window and an ordinary damper controls the flow of incoming air. To let the warm air out one of the highest panes in the window or a pane in another window must be removed. Both the pipe and the empty window frame will have to be closed during very cold weather.



Ventilating flue for a cellar storage room made of a length of stovepipe. Upper left-hand windowpane has also been removed

The cellar floor—Vegetables like a dirt floor better than one made of concrete but if you have the latter you can cover it with a two-inch layer of moist sand. You will have to sprinkle it occasionally to keep the atmosphere from getting too dry.

Pleasing the clients—You will find, if you test with a thermometer, that the temperature in your storage room varies from place to place. This is all to the good because it makes it possible for you to give the various fruits and vegetables the conditions they prefer.

Beets, turnips, carrots, parsnips, salsify and other root vegetables like the moist cold of the cellar floor or of a box of sand. But remember if you use boxes not to keep the sand too wet—excessive moisture increases the risk of spoilage.

Cabbages like it cold too but they also like air. There are several ways of storing them in the cellar. Their roots may be buried in moist sand (just as though they were growing in it), or they may be hung by their roots from the ceiling. Probably the most common method is to cut off the roots about 2 inches from the heads and lay the cabbages on a shelf in a cold part of the cellar.

Potatoes do best if they are stored in baskets, crates or slatted bins, and late potatoes last out the winter better than the early ones. Be sure they are kept in a dark place and have plenty of ventilation; boxes or baskets may be raised from the floor three or four inches so that air can get under and around them.

Onions must be mature when gathered. They need to be dried out in the open air or in a barn or shed for several days, then packed into open crates or coarse mesh bags and placed in storage where they will have plenty of ventilation, a comparatively low temperature and dryness.

Sweet potatoes, squash and pumpkin prefer a dry and

fairly warm climate, so put them on shelves in the warmer sections of your storage room.

Apples like the same conditions as potatoes. Choose late, well matured varieties and store in baskets or crates not larger than a bushel. Keep in cool, well ventilated spot.

Pears for storage should be of winter varieties, mature but not ripe. If they are to be used within a few weeks wrap them individually in paper and keep at a temperature of 60° to 65° F. Otherwise store as apples.

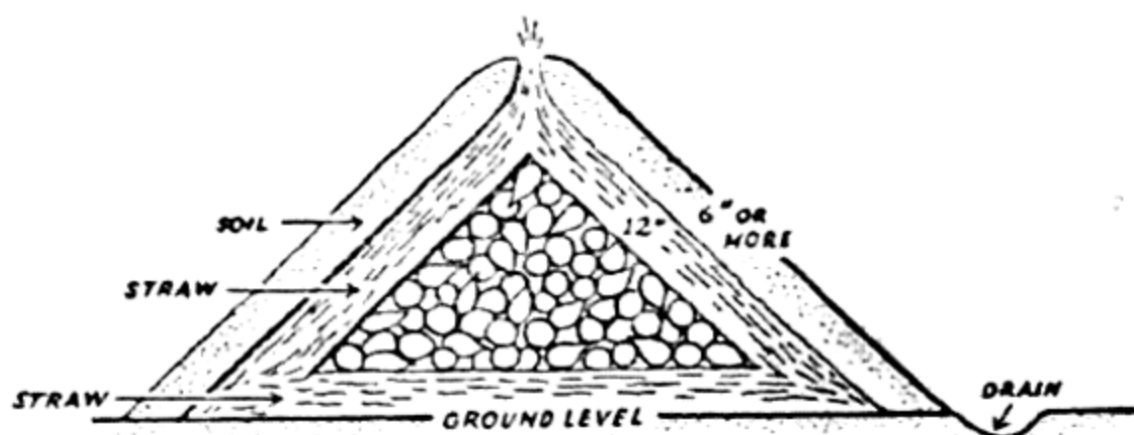
Keep your vegetables separated as far as possible from the fruits in order to prevent the latter from absorbing earthy flavors and smells.

IF YOU DECIDE ON PIT STORAGE

The aim of pits and mounds is to keep the produce they contain cold but frost free. Therefore in really rigorous climates this kind of storage may only be safe for a couple of months in the autumn unless you confine yourself to horse-radish, parsnips and salsify—vegetables which seem to improve with freezing. Because these little storehouses must be constructed to withstand the climatic conditions in your section of the country I again advise you to consult a local expert on the subject or to send to your state agricultural college for detailed instructions. In general the directions for building them run like this:

To make a storage pit—Dig a hole or trench about 18 inches deep and wide enough to accommodate all the vegetables you wish to put into it. Line the inside of the excavation with about 4 inches of dry straw. Then put in your vegetables but do not pile them up quite to ground level. Cover them over with another layer of straw. Now pile soil over all your mound to a depth of about 6 inches. Finally dig a drainage ditch around the hummock you have built up.

To make a storage mound—This is really simpler than making a pit and usually just as satisfactory. First you mark off a well drained area, 3 to 5 feet in diameter. Now lay down a six-inch bed of dry straw and pile your vegetables on this, building them up in the shape of a cone. The height of the mound should be approximately one-half the diameter of the base area. Next cover the vegetables with a six-inch layer of dry straw and then throw on enough earth to keep the straw in place. Leave some straw sticking through the soil at the very top of the mound to act as a ventilator.



An Outdoor Mound for Storing Vegetables

It may even be wise in your locality to build your mound around a central ventilating flue made of lath, a roll of chicken wire, or even a bundle of cornstalks. A piece of board or tin placed over the opening will keep rain from leaking down into the mound through this improvised ventilating device.

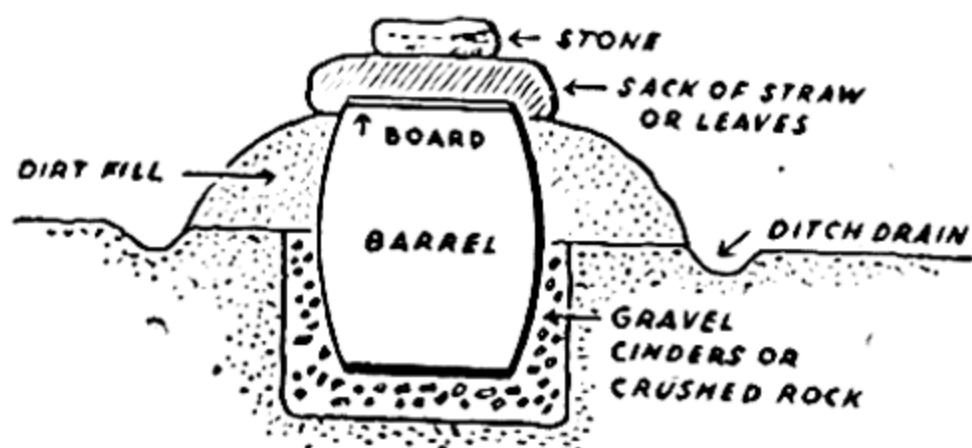
Whenever you want to remove vegetables from the mound simply dig through the earth and straw until you reach what you are looking for and take it out. Needless to say you replace the straw and earth to protect the vegetables that are left.

And here's another thought to keep in mind. Several small mounds or pits are preferable to one large one be-

cause you expose and disturb so much less produce when you open them.

Among the vegetables that take readily to pit and mound storage are cabbage and all the root varieties except sweet potatoes. Apples too can be stored in this way.

A barrel does the trick too—You can lay a barrel on its side, fill it with vegetables, cover it with straw and earth as described above and use it as you would a mound. Or you can sink it upright in the earth and fill and cover it as directed for pit storage. Barrels treated thus are really nothing more than a modification of the pit and mound technique, but they do have the greater advantage of protecting produce from marauding animals. If sunk in the ground the barrel must be placed in a very well drained area; and to make doubly sure of good drainage set it on a bed of gravel, crushed rock or cinders, just as you do your clay flowerpots when you want good drainage for your house plants. The drawing shows you how it is done.



How to Make a Barrel Storage Pit

GARDEN ROW STORAGE

In this method of storage, vegetables are left just where they grew. Not every vegetable can be treated this way, of course, but it is by far the easiest way to store parsnips and salsify. If the ground stays frozen all winter

you may have to wait until spring to get at them but it is nice to know they are there in reserve when your other supplies have dwindled.

In sections where eccentric temperatures cause frequent alternations of freezing and thawing it may be necessary to cover the beds with leaves and straw and place over them a thick layer of earth.

Beets, carrots and turnips can also be left in the ground through the cold weather but their tops must be cut back to within an inch of the ground. They, too, need to have their rows protected with a thick straw and earth blanket to prevent freezing.

YOU CAN EVEN STORE THE SALAD!

Whether you're an old or a 'prentice hand at gardening you'll feel proud as Punch when, long after the growing season is over, salads made of fresh tomatoes, celery, cabbage and green peppers from your own garden begin to appear on your table. Storing them is not as tricky as you may think.

Celery—Store it in out-door trenches or in wooden frames in the cellar. The latter way is easier for any family that raises food for its own use and not for market.

To make a frame build a box without a bottom and place it on the cellar floor. Or you can knock the bottom out of a box you already have. Next put about 4 inches of sand or light soil in it and water well. Now for your celery! You plant it in tightly packed rows, leaving about 6 inches between each row. Whenever the soil becomes dry water it but do not let the leaves or stalks get wet. (You can use a short hose or funnel.) Choose immature celery plants for storage: they will actually grow a little indoors. But be sure to keep them away from the strong flavored vegetables as they pick up foreign flavors rather easily.

Cabbage can be stored in an out-door pit or indoors in baskets, crates or on slatted shelves two or three layers deep. Cabbage likes a temperature of about 32° F. and a moist atmosphere.

Peppers should be harvested before the first frost. Pull the plants up by the roots and hang them upside down in a frost-free place. Cellar or attic beams, garage or tool shed rafters are ideal. At temperatures ranging between 34° and 40° F. they will keep from one to two months. Picking salad fixings for Thanksgiving dinner right off home grown vines is a thrill no homemaker will want to miss.

Tomatoes—You pull the vines just before the first freeze and while the tomatoes are green; half ripe ones will rot. Hang them head down in a ventilated place the temperature of which is well above freezing. There should be just enough moisture in the room to prevent the tomatoes from shriveling. Pick them as needed and ripen them on a sunny window ledge.

Another way to store tomatoes is to pick them green from the vines just before frost. Store them on shelves in a cool, well-ventilated place or in boxes where they do not touch each other. Many of them will ripen and have a fine flavor.

DOES THIS TYPE OF STORAGE PAY?

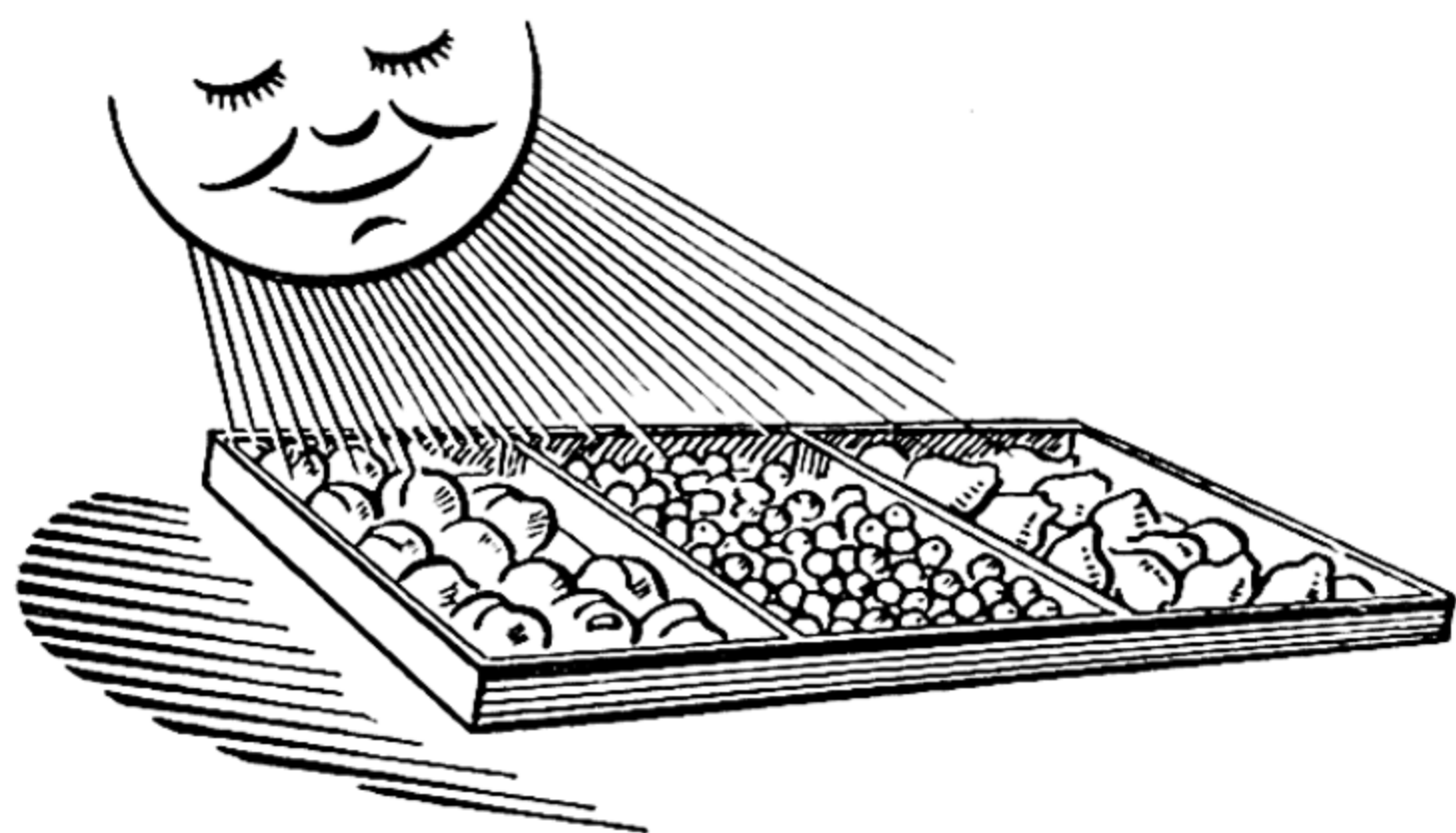
Trying to prophesy how long your stored produce will remain in good condition is pretty much in a class with attempting to predict the weather. So much depends on climate, the care with which you prepare your storage vaults, and the original condition of the product. But I predict that once you've tried it you'll never give it up.

This table will give you a rough idea of what may be expected under ideal storage conditions in moderate climates in the latitude of Pennsylvania to Nebraska. Farther

north, things will probably keep longer; farther south, not so long. But Southerners should not complain on that score. Their prolonged growing season spares them the necessity for playing squirrel quite as long and as earnestly as the rest of us.

How Long Can I Store Vegetables?

| <i>Product</i> | <i>Where to Store</i> | <i>Temperature° F.</i> | <i>Period</i> |
|----------------|-----------------------|------------------------|---------------|
| Beets | ground, pit, cellar | moist, cold, 32-40 | 4-6 months |
| Cabbage | pit, cellar | moist, cold, 32-40 | 4-5 months |
| Carrots | ground, pit, cellar | moist, cold, 32-40 | 4-6 months |
| Onions | attic, cellar | dry, cold, 32-40 | 5-8 months |
| Parsnips | ground, pit, cellar | moist, cold, 32-38 | 4-6 months |
| Potatoes | pit, cellar | moist, cold, 34-38 | 5-6 months |
| Pumpkins | attic, cellar | dry, medium, 40 | 2-3 months |
| Salsify | ground, pit, cellar | moist, cold, 32-38 | 4-6 months |
| Squash | attic, cellar | dry, medium, 40 | 2-5 months |
| Sweet Potatoes | attic, cellar | dry, medium, 50-55 | 4-6 months |
| Turnips | ground, pit, cellar | moist, cold, 32-40 | 4-6 months |



Chapter Eight

THE FINE ART OF DRYING

If the other half of that second bushel of peaches begins to look at this point like too much for your jar allotment by all means try drying them.

Drying is one of the oldest methods of food preservation, yet in some ways still the youngest. The spectacular progress made by the dehydrated food industry during the war has caused all of us to realize there's still much to be learned about the subject. But large-scale drying under the most accurate controls is one thing. Home drying has not been and probably never can be subject to quite such close controls. That doesn't mean it has to stay in the kindergarten. High ranking scientists in all parts of the country have been experimenting lately to find out just what are the best conditions for drying food at home.

The material for this chapter was gathered from the laboratories where the most complete work has been done. If you've never dried fruits and vegetables before, or haven't particularly liked them when you did, I hope these pages will start you off on an exciting new food adventure.

These are the keynotes to remember:

Memo to me

I'LL need fruits well ripened but firm; vegetables that would be just right for table use.

Again that caution about freshly picked produce; drying is no exception: 2 hours from field to drier still the ideal.

Spread foods, cut in uniform pieces, thinly and evenly on the trays—take care not to overlap large pieces.

Get a bright and early start—drying must not be interrupted until well after the halfway mark of the drying period; drying may take 8 to 15 hours. Toward the end it can be stopped if necessary and finished next day.

If I use a drier or my oven I must avoid temperature lags or spurts—too little heat and I'll have sour foods—too high heat and I'll scorch or toughen them.

For extra good products start drying at moderate temperatures, increase slightly in middle of period, lower again near end.

Note: Be systematic about stirring foods during drying—several times at least. At the same time shift trays around.

If the foregoing notes about temperatures sound bewildering take heart. A few pages over you're going to find a chart that will make everything clear. Before we turn to it, however, I must explain the three ways in which a homemaker can dry fruits and vegetables at home.

SUN DRYING

This is the oldest method of all. Because you must take the weather as it comes the process is hard to control; nevertheless rewarding results can be obtained with it. To produce satisfactory products you will need a stretch of several clear, dry, sunny days; a light breeze is a big help, too. At least 2 days are usually required to complete the drying. If weather is cool it may take more.)

How to Do It—After fruits and vegetables are prepared (see pages 118-124) they are spread on trays, clean boards, paper or cloth and placed on a shelf or table in the sun, or on a roof with a southern exposure.) An even better scheme is to arrange them on trays made of wire or of cloth-covered slats; you then prop up the trays in such a way that air will circulate under as well as over the food. Covers of cheesecloth, mosquito netting or wire screening should be spread over trays to protect food from insects.

The trays must be left in the bright sunshine for as many hours each day as possible and be moved out of the shade as often as necessary.) Before the night dew starts, to gather bring them in or see that they are well covered.

You can tell that the drying process is finished when a handful of fruit grasped firmly in the hand separates quickly when released, leaving no moisture on the palm.

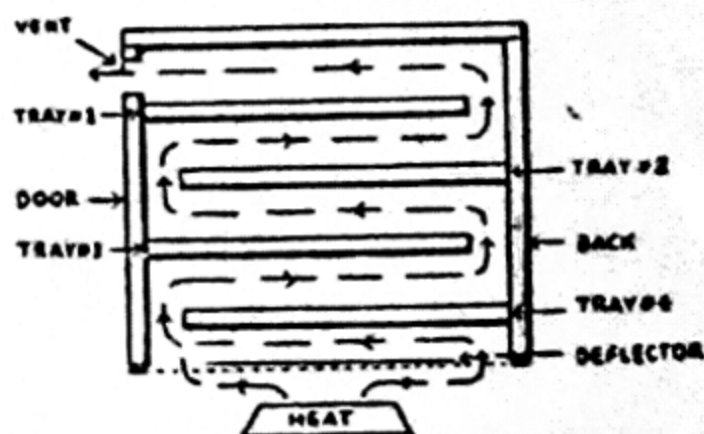
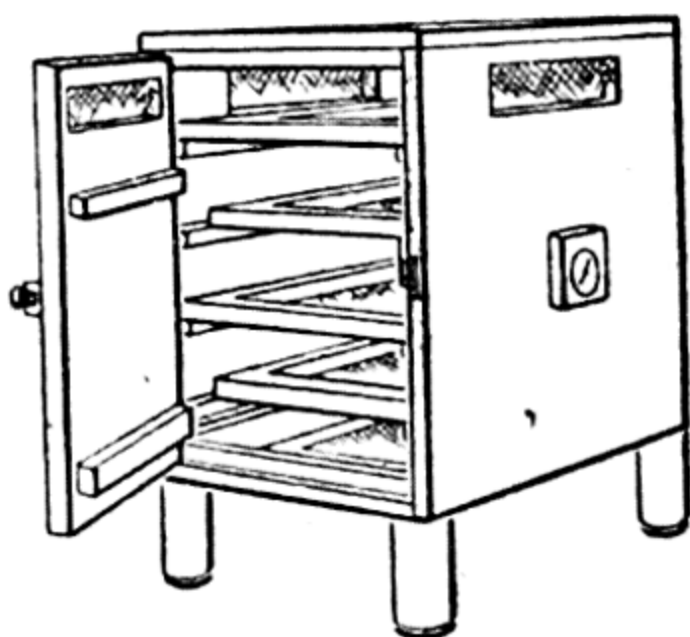
CABINET DRYING

(If you expect to dry foods in quantity and want to control the process, a cabinet drier is by all odds your best bet.

Driers or dehydrators (if you want to be technical) may vary all the way from a simple homemade model which you can hang up over the kitchen range to the most professional cabinet drier equipped with an electric coil or a bank of lamps for heat and a fan for circulating the air.

You Can Make a Drier—The model shown here is one of the simpler varieties and can be put together by anyone who can wield a hammer and saw. Designed to be set over a gas burner, an electric unit or a coal range, it can be made from a wooden box or waste lumber. Take some liberties with the dimensions given here if you must but do not make it much larger because then you will have a drier too big to do a good job on a single burner or unit.

The dial thermometer mounted in the side of the cabinet is convenient but not absolutely essential. Any good thermometer which will register accurately from 125° to 160° F. may be similarly mounted or simply placed on a tray inside the cabinet.



An efficient home drier that can be made at a minimum of cost and labor

Directions for Making

Inside Dimensions: Width 14 inches, depth 20 inches, height 19 inches.

Materials Needed: (A tight wooden box of suitable size or sufficient lumber to build one; metal cloth with $\frac{1}{8}$ inch mesh—48 inches of cloth 2 feet wide or 40 inches if it is 2½ feet wide; small staples; nails; 2 hinges; door fastener; 4 number 2 size tin cans for legs.

1. Cut vents 2 inches by 10 inches in both sides and the

door, 1 inch from top of drier. Fasten screen over the inside of each vent.

2. Make 4 tray frames of wooden strips 1 inch wide and not less than $\frac{3}{4}$ inch in thickness. Each frame is made $13\frac{1}{2}$ inches wide by 18 inches long (or $\frac{1}{2}$ inch narrower and 2 inches shorter than the inside dimensions of the box). Staple metal cloth to the bottom of each frame.

3. Use wooden strips $\frac{3}{4}$ by $\frac{3}{4}$ inch for tray runners. Nail them to the box sides spacing them evenly so that there will be about 4 inches above and below each tray.

4. Put a 2-inch block at the back of the first and third tray runners. Trays 2 and 4 are pushed to the back of the drier when they are used. The result is a staggered arrangement which causes heated air to flow around and over trays in the direction of the arrows in the small drawing.

5. Cut a hole in one side of box in which to mount the thermometer, midway between the second and third trays and centered from front to back of drier.

6. Screen the bottom of the drier. A sheet metal baffle plate on the bottom is desirable. For it use a piece of sheet metal 8 by 14 inches (or 5 to 6 inches smaller each way than the bottom of the drier). Center the sheet metal on the bottom screen.

7. Fasten the tin-can legs to the corners of the drier.

8. Mount the door and attach the fastener.

Note: Sketch and description courtesy New York State College of Home Economics, Cornell University.

How to Operate Your Drier

The drier is now ready to go to work for you. Set it on the stove and start off with moderate heat. As drying progresses, regulate the heat so as to maintain the correct temperatures inside the drier or oven (see pages 126-127).

If your drier is not completely filled at one time start

foods drying on the top trays where the temperature is a little cooler. Toward the middle of the drying period move these trays down to the lower and hotter positions, and put new batches of food in the upper ones. Near the end of the drying period shift the trays back again to the higher racks. Rotating them this way will mean more even drying.

As foods dry they shrink so that the contents of two trays can often be combined on one, thus releasing a tray to start a new batch going. In doubling up like this be sure to combine on the same tray only the foods which have reached the same degree of dryness.

OVEN DRYING

This method is useful when you have fairly small quantities of food to dry. Your success with it will depend pretty much on how well you are able to keep the temperature of your oven within the range of 125° to 160° F. An almost constant vigil is necessary.)

How to Do It—The oven door usually is propped part way open in order to increase air circulation, to carry away moisture, and to help control the temperature.

You can spread the fruit or vegetable to be dried on a cloth stretched over your oven rack. But a separate rack is easier to handle and gives better results. You can easily make one. Simply tack thin, loosely woven cloth to a wooden frame which should be just a little smaller than the oven rack.

Keep a thermometer in the oven if possible, and check frequently to see that the temperature stays where it is supposed to be at the given time. Open the door wider or close it more if the oven gets too hot or too cool. Because the temperature is apt to vary from one part of the oven to another you will have to stir the food or turn the tray around often.



DRYING FRUITS

At last the preliminaries are out of the way and you can spring into action. You may have decided that you're going to dry both fruits and vegetables but even if you have I suggest that you take your first flight with fruits. They're bound to be a success if you follow the directions carefully and the whole family will like them.

Apples, apricots, berries, cherries, peaches and pears all take kindly to drying; some varieties of figs and plums also dry well. And because dried fruits grow sweeter as they dry they require little sugar when served.

Most of your fruits will need some sort of pre-drying treatment either for looks or to speed up drying. For instance, prunes which have a waxy coating are often dipped into a hot lye solution to dissolve the wax and crack the skin. That's both for speed and appearance. The lye dip is of course followed by a thorough rinsing. Some of the other fruits need only to be dipped in plain boiling water.

Light colored fruits must be given special treatment to keep them from darkening. They can be placed over boiling water and steamed for a few minutes or they can be sulphured. Sulphuring is the preferred method because it prevents souring, discourages insects during drying and produces a more attractive and better flavored product. Follow your sulphuring directions with meticulous care and you will not harm your fruit. In fact there is good evidence that this treatment helps preserve vitamins.

How to Sulphur Fruit—Sulphuring must be done outdoors because the fumes of the sulphur are stifling.

1. Find a tight box of wood or heavy corrugated paper, or a barrel. Lacking these make a wooden frame that can be covered with roofing paper or wallboard. Next find or make several trays of board—wallboard or heavy cardboard is good. These when stacked are to fit under your inverted box so make dimensions tally.

Caution: Do not use metal trays because sulphur fumes corrode them.

2. Prepare the fruit for drying (see pages 118-121). Spread it out on the trays.

3. Stack trays with small blocks of wood between them to allow for free circulation of the sulphur fumes.

4. Set stacked trays on larger blocks of wood so that bottom tray is 6 to 8 inches above the ground.

5. Measure out on to a piece of paper 1 teaspoon of powdered sulphur for each pound of fruit on the trays. Twist the ends of the paper loosely, put it into a shallow metal can or pan that you don't care about, and place it on the ground in front of the trays.

6. Set fire to the paper. As soon as it is burning well slide the pan containing it under the trays and turn your box down over them. See that there is a small air space at the bottom of the box, a pebble under one corner or a few scoops of earth will do the trick.

7. Leave the fruits in the sulphur fumes for the time specified for the fruit being treated (see pages 118-121).

Final Step in Drying Fruit—You're now ready to transfer your fruits from the sulphuring box to the drying trays which in turn you will put in the drying cabinet, the oven or out in the sunshine. For the first two methods the fruits are started at a low temperature—about 130° F. for everything except cherries and figs which should begin drying

at about 120° F. For sun drying no temperatures, of course, can be given.

How to Tell When Done—Toward the end of the drying period test every half hour to determine when drying is complete. Most fruits are sufficiently dry when a handful of pieces separate after being pressed tightly in the hand. (If they stick together when this test is applied pull them apart again and replace on the drying rack.)

Pieces should be removed from the drier as soon as they are dry. If you find some pieces of the same batch are dry while others are still moist remove the dry ones and leave the others in the drier until finished.

DRYING VEGETABLES

Except for corn, dried vegetables are not as popular with most families as canned, frozen or cellar stored ones. So experiment at first with drying them, doing only a few vegetables or very small quantities of a longer list. Then if they are liked you can expand your stocks next season. Vegetables should only be dried by controlled heat (not sun dried) to protect food value, color and flavor.

Corn is the easiest of all vegetables to dry and repays the homemaker for her work by its rich, natural flavor when cooked. Other vegetables that dry well and have their devotees are asparagus, green snap beans, beets, broccoli, cabbage, carrots, celery, greens, okra, young green peas, squash and turnips.

Before being put into the drier or oven your vegetables must be precooked. This prevents further ripening, sets their color and softens their fibers so that the moisture escapes more easily. Vegetables can be immersed in boiling water for the required time but steaming is preferable because fewer vitamins are lost this way.

How to Steam—1. Use a regular steamer, a pressure cooker with the cover left unclamped and the petcock open, or any large covered kettle which will hold a colander or wire basket. You will need a rack of some kind to hold the colander or basket above the level of the water. Blocks of wood may do the trick.

2. Put an inch of water into the pot you have selected and set it on the range to boil.

3. Prepare vegetable according to directions in specific recipe (see pages 121-124); put into colander or food container; place on rack over boiling water.

4. Cover pot and keep vegetable steaming for the time specified in the recipe.

5. Remove vegetable.

Final Steps—As soon as the steaming period is finished spread the vegetable out on the drying trays and put them in your drier or oven. When the drying period is about three quarters over begin to test every half hour to see whether the vegetable has dried sufficiently. The pieces will be hard and brittle when dry. If in doubt leave them in a little longer but keep the temperature low.

HOW TO PREPARE FRUIT FOR DRYING

APPLES

Select late varieties of the quality you use for dessert or cooking; mature but not soft. Wash, core, pare and remove blemishes. Cut into $\frac{1}{4}$ inch slices or rings or into quarters or eighths. Before drying apples should be sulphured 30 minutes, or steamed 5 to 7 minutes or held in salt solution for 10 minutes (4 teaspoons salt to 1 gallon water). Start drying at about 130° F.

APRICOTS

Select tree-ripened apricots. Do not peel. Cut in half and remove pits. Sulphur $1\frac{1}{2}$ hours or steam 5 to 7 minutes. Spread on trays in single layers pit side up. Start drying at about 130° F.

BERRIES*Blackberries**Dewberries**Loganberries**Raspberries*

Select ripe but firm fruit only. Spread on wooden or cloth covered trays to keep the berries from sticking. Spread in thin layers—for soft berries not more than 2 berries deep. For sun drying spread in single layers. Place trays in drier as quickly as possible as delay may cause spoilage. Start drying at about 135° F.

CHERRIES

Varieties that are especially suitable for drying are Tartarian, Bing, Lambert, Dyckman and Sour Pie cherries. Use fruit that is just ripe. Wash thoroughly. Remove stems and damaged cherries. Dry unpitted. Or pit the fruit and drain about 1 hour. The juice may be canned. Spread fruit on trays in single layers. Start drying at about 120° F.

FIGS

Suitable varieties are Adriatic, Michigan, Smyrna, Celeste, Turkey, Magnolia, Brunswick and Black Ischia. Hand pick when well ripened but still firm. Remove stems. Cut in half. Or if small or partly dried on the tree dry whole. Blanch for 1 minute in steam or boiling water; or sulphur for 4 hours. Spread in single layers. Start drying at about 120° F.

NECTARINES Select tree-ripened nectarines. Do not peel. Cut in half and remove pits. Sulphur $1\frac{1}{2}$ hours or steam 5 to 7 minutes. Spread on trays in single layers pit side up. Start drying at about 130° F.

PEACHES Select any good table variety ripe enough for eating but not dead ripe. Wash. Immerse in steam or boiling water for 1 to 2 minutes to loosen skin. Peel, cut in halves or cut large peaches in quarters or slices. Remove pits. Sulphur 1 to 2 hours or steam 5 to 7 minutes. Place on trays in single layers pit side up. Start drying at about 130° F.

PEARS Bartlett or Kieffer pears are varieties suitable for drying. Choose pears with fine grained flesh, fairly high sugar content and distinct flavor. Peel, core, cut into $\frac{1}{4}$ inch slices or rings or into quarters or eighths. Sulphur 3 to 4 hours or steam 5 to 7 minutes. Work rapidly but if fruit cannot be treated immediately hold it in a salt solution (4 teaspoons salt to 1 gallon water) until it can be treated. Place on trays in single layers. Start drying at about 130° F.

PLUMS Varieties suitable for drying are: Abundance, Burbank, Clifford, Hunt. Wash, cut in half and remove pits. Sulphur 20 to 25 minutes. Then place on trays in single layers pit side up. Start drying at about 130° F.

PRUNES

To soften skins place in steam or boiling water 2 minutes. Or prepare a solution of 2 level tablespoons of household lye to 1 gallon of boiling water in an enamel lined kettle (do not use aluminum). Dip prunes in the solution for 5 to 30 seconds and rinse immediately under cold running water. Dry with pit in or cut prunes in halves and remove pits. Spread fruit on trays in single layers, pit side up. Start drying at about 130° F.

HOW TO PREPARE VEGETABLES FOR DRYING**ASPARAGUS**

Choose mature but tender asparagus. A variety especially recommended for drying is the Washington. Use only the green tender tips. Steam 4 to 5 minutes. Spread on drying trays in single layers.

BEANS

*Lima and
other fresh
shell beans*

Gather when just ready for table use—mature but tender. Shell. Steam 8 minutes or hold in boiling water 5 minutes. Spread on trays $\frac{1}{2}$ to $\frac{3}{4}$ inch deep or 1 lb. per square foot. Stir frequently at the beginning of the drying process.

**BEANS,
SNAP**

All varieties are suitable for drying. Choose small tender beans. Wash, cut off ends, leave the beans whole or cut in halves or thirds. Steam for 12 to 15 minutes or until almost tender. Spread on trays, $\frac{1}{2}$ to $\frac{3}{4}$ inch deep or 1 lb. per square foot.

BEETS

All varieties are suitable for drying. Trim off tops and wash beets thoroughly. Cook in steam 20 to 30 minutes, depending on size. Cool, peel, dice or cut into $\frac{1}{4}$ inch slices. Pile loosely on trays $1\frac{1}{2}$ lbs. per square foot. Stir frequently during drying so pieces will not stick together.

BROCCOLI

Choose broccoli in good condition for table use. All varieties are suitable for drying. Wash thoroughly and slice heads lengthwise. Steam 10 to 12 minutes. Spread on trays $1\frac{1}{2}$ lbs. per square foot.

CABBAGE

Any variety is suitable for drying. Choose cabbage in good condition for table use. Trim, wash and slice or shred. Steam 1 to 2 minutes. Spread on trays $\frac{3}{4}$ lb. per square foot.

CARROTS

Choose very yellow varieties in good condition for table use. Wash, peel, trim and cut in slices or strips. Steam 8 to 10 minutes. Spread on trays $1\frac{1}{2}$ lbs. per square foot.

CELERY

All varieties are suitable for drying. Choose celery in good condition for table use. Trim, wash and slice or shred. Steam 1 to 2 minutes. Spread on drier trays 1 lb. per square foot.

*CORN,
SWEET*

Any good table variety is suitable for drying. Pick in tender milk stage in amounts that can be prepared immediately for drying. Husk, remove any blem-

**CORN,
FIELD**

ishes. Steam for 10 minutes or hold in boiling water 12 minutes or until the milk is set. Drain, cool, cut corn from cob. Spread on trays $\frac{1}{2}$ to $\frac{3}{4}$ inch deep or $1\frac{3}{4}$ lbs. per square foot. Stir often.

Field corn can be dried very satisfactorily by the following method. To 4 cups corn cut from the cob add 1 cup rich milk, 2 tablespoons sugar, $\frac{3}{4}$ tablespoon salt. Cook over low heat, stirring frequently until all liquid has evaporated. Spread on drier trays $\frac{1}{2}$ inch deep or $1\frac{3}{4}$ lbs. per square foot. Stir often.

OKRA

Any good table variety is suitable for drying. Select young tender pods. Wash, blanch the whole pod in steam or boiling water for 1 minute. Remove stems and cut pods in $\frac{1}{2}$ inch to 1 inch lengths. Steam 5 to 7 minutes. Place in thin layers on trays, $1\frac{1}{2}$ lbs. per square foot.

PEAS

Any good table variety may be gathered when just ready for table use. Choose mature but tender peas. Shell. Clean and grade carefully. Steam 5 to 7 minutes or hold in boiling water 4 to 5 minutes. Spread on trays $\frac{1}{2}$ to $\frac{3}{4}$ inch deep or 1 lb. per square foot. Stir frequently.

**PEPPERS,
SWEET**

Any good table variety is suitable for drying. Choose firm crisp peppers. Wash, clean out seeds. Dry whole or sliced. Steam 1 to 2 minutes. Spread on trays in single layers, 1 lb. per square foot.

PUMPKINS
or WINTER
SQUASH

Any good table variety is suitable for drying. Choose mature products in good condition for immediate use. Wash, remove seeds, cut in strips 1 to 2 inches wide, peel, cut in $\frac{1}{2}$ inch slices. Steam or hold in boiling water 5 to 7 minutes. Spread on trays in single layers $1\frac{1}{2}$ lbs. per square foot.

SOYBEANS

Edible varieties of soybeans are suitable for drying. Use a variety recommended by the experiment station of your state agricultural college. Pick when pods are filled and beans are still green and tender. Blanch pods in steam 5 to 7 minutes and shell. No further steaming is necessary. Spread on trays $\frac{1}{2}$ to $\frac{3}{4}$ inch deep or 1 lb. per square foot. Stir frequently at beginning of drying process.

SPINACH
and other
greens

Any good table variety is suitable for drying. Choose tender, crisp, not fibrous, leaves. Trim off roots and heavy stems. Cut out heavy midribs. Wash thoroughly. Steam 4 to 8 minutes. Spread loosely on trays not more than 1 inch deep or $2\frac{1}{2}$ lbs. per square foot. A layer of cloth on the trays prevents sticking. Start drying at about 135°F .

TURNIPS or
RUTABAGAS

Any good table variety is suitable for drying. Choose turnips in good condition for table use. Wash, peel, trim and slice. Steam 3 to 4 minutes. Spread on drying trays $1\frac{1}{4}$ lbs. per square foot.

HOW TO COOK DRIED FOODS

All dried foods, except greens, must be soaked in water before cooking. But you've had enough experience with homemade baked beans, split pea soup and lentils to know that. Put the quantity of the vegetable you wish to cook into a bowl or pan and cover it with cold water. Most products will absorb at least $1\frac{1}{2}$ to 2 times their own volume of water. If this quantity of water is absorbed before soaking time is up add more. Soaking time will vary according to the dryness of the product. Fruits may need anywhere from 2 to 10 hours. Vegetables which are precooked should need no more than 2 hours. Small pieces of food need less time for soaking than large ones.

Prolonged soaking may plump the food out to a heartening degree but the resultant flavor will be more watery than it would be if you soaked it only just long enough to make it tender.

The best way is to experiment. When you cook the first batch of your home-dried food try soaking it for a medium length of time. Try 2 hours for precooked vegetables, 4 to 5 for fruits. If the food has not been soaked long enough it will require extra time to cook tender. If this extra time seems excessive increase the length of the soaking period when next you use some of the product.

Always cook the food in the water in which it was soaked. Put it on over low heat, cover and bring slowly to a simmering temperature. Cook until tender. Season all dried vegetables as you would fresh. Fruits are usually cooled, sweetened to taste if they need to be, and served like canned varieties.

Do not expect dried foods to taste exactly like fresh ones. They have flavors of their own which are no less pleasing for being different.

GUIDE FOR DRYING FRUITS AND VEGETABLES IN DRIER OR OVEN

This table is based on results obtained under carefully controlled conditions. Don't worry if you can't duplicate them down to the last detail; by aiming for these standards you'll get good products.

| <i>Product</i> | <i>Highest Drying Temperature °F.</i> | <i>Temperature At End of Drying °F.</i> | <i>Average Drying Time—Hours</i> | <i>Appearance When Dried</i> |
|------------------|---|---|--------------------------------------|---|
| Apples | 160 | 145 | 12-14 | Springy elastic feel. Separate when pressed. |
| Apricots | 150 | 145 | 15-18 | Springy elastic feel. Separate when pressed. |
| Berries | 155 | 145 | • | Rattle on trays. Do not show moisture when crushed between fingers. |
| Cherries | 150 | 145 | • | Springy elastic feel. Separate when pressed. |
| Figs | 150 | 145 | 10-12 | Glossy dry skin. Flesh slightly moist. |
| Nectarines | 150 | 145 | 15-18 | Pliable and leathery. |
| Peaches | 165 | 150 | 18-20 | Pliable and leathery. |
| Pears | 150 | 145 | 12-14 | Springy elastic feel. Separate when pressed. |

| | | | | |
|--------------------------------|-----|-----|-------|--|
| Plums | 165 | 150 | • | Pliable and leathery. |
| Prunes | 165 | 150 | • | Springy elastic feel. Separate when pressed. |
| Asparagus | 150 | 145 | 7-9 | Brittle, greenish-black. |
| Beans, lima | 150 | 145 | 8-10 | Hard, wrinkled. |
| Beans, green snap | 155 | 140 | 12-14 | Brittle, greenish-black. |
| Beets | 155 | 150 | 10-12 | Tough to brittle. |
| Broccoli | 155 | 145 | 8-10 | Dark and brittle. |
| Cabbage | 150 | 145 | 10-12 | Tough to brittle. |
| Carrots | 160 | 155 | 8-10 | Yellow, tough to brittle. |
| Celery | 150 | 145 | 8-10 | Stalks tough, leaves crisp. |
| Corn | 160 | 155 | 8-10 | Dry and brittle. |
| Okra | 150 | 145 | 8-10 | Brittle, green. |
| Peas | 150 | 145 | 8-10 | Hard, wrinkled green. |
| Peppers, sweet | 160 | 155 | 12-16 | Pliable and leathery. |
| Pumpkin | 165 | 160 | 12-16 | Tough to brittle. |
| Soybeans | 150 | 145 | 6-8 | Hard and wrinkled. |
| Squash, winter | 150 | 145 | 12-16 | Tough to brittle. |
| Spinach and other greens | 155 | 150 | 8-10 | Crisp. |
| Turnips and rutabagas | 150 | 145 | 10-12 | Tough to brittle. |

• Variable, depending on fruit.

OUTWITTING THE SPOILERS

The twin enemies of dried foods are moisture and insects and you must carefully guard them against both. Pack your foods if possible in containers which are reasonably airtight, then store them in a dry, dark, rather cool place.

Tin cans and boxes or heat-sealed cellophane bags make good containers. Glass jars which cannot be sealed tightly enough to be used in canning are satisfactory for holding dried foods too. And old rubber rings which have seen better days can be pressed into service, to help make a snugger closing. Or you can use adhesive tape or strips of cloth dipped in hot paraffin to wrap around the edges of covers that are not a tight fit.

In dry climates containers do not have to be sealed as carefully as they do in moist ones. But an extra bit of caution never harms in any climate.

In the same precautionary vein, small containers are better than large ones—obviously because you expose less food to the air if you need only a small portion at a time. Label your containers, particularly if they are made of metal, so you will know what they hold.

An occasional examination of home dried foods will pay you. If you see any indication of moisture or insects you can spread the food on a tray and heat in the oven for 30 minutes. Prop the oven door open and watch the temperature carefully to see that it does not go above 150° F.

If there are any dried greens on your shelves it's a good plan to use them first because they lose their color and flavor faster than do other products.



Chapter Nine

WHY FOODS LEAVE HOME

We Americans have always been willing to adapt our living habits to changing conditions, lopping off something here, adding something there, taking to new inventions and new ways of doing things like ducks to water.

So it's not surprising that two innovations having to do with the preservation of food at home should have met with a warm welcome. The freezing locker or unit and the neighborhood or community canning group are filling definite needs in our national housekeeping and filling them well. If you have never had any experience with either, this chapter may suggest an immediate solution to your problems. In any event it will interest you as a forecast of things to come, for frozen foods at least are destined to play a big part in the housekeeping of the future.

A TRIP TO THE FREEZER

FREEZING may be done either in a home unit or in a commercial plant. At present there are very few home freezers in existence, but spread over the country there are several thousand plants equipped to freeze food and store it in individual lockers which can be rented for a moderate fee.

Before it is frozen the food must first be prepared at home very much as it is for canning. It is then packaged and taken to the freezing plant where it is put into the sharp freezer. There it is subjected to a temperature far below zero—usually at least 15° F. below. This step seals in the juices and preserves the food's original texture.

Once frozen the food is stored at about 0° F., at which temperature it will keep indefinitely. Gradual changes in flavor occur but as these are not noticeable in meat until it has been in storage 8 to 10 months and in fruits and vegetables until after a year there seems to be no just cause for worry. Needless to say the food must never be allowed to thaw until the time comes to use it.

What Foods Can Be Frozen?

Most fruits and vegetables freeze well. The exceptions are tomatoes and salad greens, all of which have a high water content, and the starchy vegetables—potatoes, sweet potatoes and overmature peas and lima beans. But frozen-food storage is still much too precious to be utilized for hardy fruits and vegetables which keep well in cellar or pit, so you will be smart to concentrate on perishable fruits and vegetables, and on meats, poultry and fish for freezing.

Certain varieties of fruits and vegetables have been found to freeze better than others. So keep this in mind when you are planning your garden if you intend some of your produce to go into the freezer.

Containers for Frozen Foods

To protect foods from drying out in frozen storage they must be packed in containers which are both moistureproof and airtight. Waxed cardboard boxes with cellophane or heavily paraffined paper liners are frequently used because they are easy to work with, stack compactly and the food can be removed from them while it is still frozen. Heavily waxed cups with slip-in or slip-over covers are also good. These containers are usually available at the locker plant. The boxes with liners are best for products which can be drained before being packed; the cups can be used for either dry or liquid packed food. Meats, poultry and fish are usually wrapped well in moistureproof paper and fastened with gummed or cellulose tape.

Glass jars are sometimes used, particularly for fruits packed in sirup or vegetables in brine. They must be closely sealed in regular canning jars or commercial food jars with water-tight lids.

If you are fortunate enough to live in a locality where there is a freezing plant investigate it. There may still be an unrented locker and if there is you will surely want to preserve some of your food stock by this method.

COMMUNITY CANNING

Very different from the workings of the commercial locker plant are the large and small groups of women who are getting together to pool equipment and experience in the battle to save food. There's a flavor of the old-time quilting bee about the smaller gatherings. Mrs. B has a pressure cooker she is perfectly willing to share as long as she can supervise its operation, Mrs. J has a water-bath canner, Mrs. C's husband has built a drier for her, Mrs. D's kitchen has plenty of elbow space. Whether produce shall be brought

to the equipment or equipment to the produce becomes a matter of group choice and a flexible schedule gets each crop canned while it's at its best. Be grateful if you can find a group like this to join.

If none of these small groups is at hand and you still feel that you would enjoy working with other women there may be a canning center in your community where you can put up your fruits, vegetables and even meat and poultry under certain specified conditions. Or if there is no such center perhaps you are the person to work up some local interest in getting one started.

A community center can be established in the home economics department of a school or in a church or club kitchen. Or it can be on the grand scale, a large plant turning out thousands of jars or cans for local hospitals or school lunches as well as for individuals.

But whether it is large or small the community center must be well organized and directed by competent persons. If you are interested in starting one send for a booklet called "Community Food Preservation Centers." It can be bought for 10¢ from the Superintendent of Documents, Washington, D. C.

HISTORY REPEATS ITSELF

Back in the days when this nation was in the making a woman had to be skilled in the ways of preserving food if her family was to survive. Today homemakers again face the task of keeping their families well and strong through a period of scarcity.

The job is easier than it was in pioneer days but there's no denying that it will take time and planning. Yet I haven't a doubt that once you get started you won't stop until you've accumulated a food reserve that will be a constant source of delight and amazement to your family.

INDEX

A

- Acid in foods, 11, 12, 62
- Altitude, adjustment for, 33, 54-55, 58
- Apple Butter, 81
 - Jelly, 66
 - Pineapple Jelly, 67
 - Preserves, 78
 - Quince Marmalade, 75
- Apples, canning, 25, 27-28, 32
 - cellar storage, 103
 - drying, 118, 126
 - food value, 3
 - pit or mound storage, 105
- Apricot Butter, 80
 - Preserves, 76
- Apricots, canning, 25, 25, 32
 - drying, 119, 126
 - food value, 3
 - Spiced, 93
- Asparagus, canning, 47, 49, 53, 54
 - drying, 121, 127
 - food value, 3

B

- Bacteria, 10-12, 43, 58
- Bananas, food value, 3
- Barrel storage, 105
- Beans, lima, canning, 47, 49, 53, 54
 - drying, 121, 127
- Beans, snap, canning, 47, 50, 53, 54
 - drying, 121, 127
 - food value, 3
 - salting, 98
- Beans, soy, canning, 48, 50, 54
 - drying, 124, 127

- Beet Pickles, 87
- Beets, canning, 48, 50, 53, 54
 - cellar storage, 102, 108
 - drying, 122, 127
 - food value, 3
 - garden row storage, 105-106, 108
 - Pickled, 55, 87
 - pit storage, 108
- Berries, canning, 26, 28, 32
 - drying, 119, 126
- Blackberry Jelly, 66
- Blanching, ix
- Boiling, ix
- Botulinus poisoning, 11, 44
- Bread and Butter Pickles, 88-89
- Brining, ix
- Broccoli, drying, 122, 127
 - food value, 3

C

- Cabbage, cellar storage, 102, 107, 108
 - drying, 122, 127
 - food value, 2, 3
 - pit or mound storage, 105, 107, 108
- Sauerkraut, 94-96
- Cabinet drier, 112-114
 - how to make, 112-113
- Cabinet drying, 111-114
- Canning, 6, 10-12, 13-58
 - fruits, 22-33
 - general, 13-20
 - juices, 40-42
 - non-acid vegetables, 43-58
 - tomatoes, 38-39
- Cans, tin, 17

Cantaloupe-Peach Conserve, 73
 Plum Butter, 80
 Caps, jar, 14-19
 zinc, 15
 Carrot-Orange Marmalade, 75
 Carrots, canning, 48, 50, 54
 cellar storage, 102, 108
 drying, 122, 127
 food value, 3
 garden row storage, 106, 108
 pit storage, 108
 Celery, drying, 122, 127
 food value, 3
 storage, 106
 Cellar storage, 100-103, 108
 Cherries, canning, 26, 28-29, 32, 33
 drying, 119, 126
 Cherry Preserves, 76
 Mint Preserves, 78
 Olives, 94
 Chili Sauce, 92
 Chow Chow, 91
 Citrus fruits, 2
 Closures, ix, 15-19
 Colander, 8
 Cold pack, ix
 Community canning, 131-132
 Completing the seal, 18-19
 Conserves, 71-73
 Grape-Peach, 72
 Peach-Cantaloupe, 73
 Strawberry-Rhubarb, 72
 Containers for dried foods, 128
 for frozen foods, 131
 for salted vegetables, 94, 96
 Cooling of jars, 14, 24
 Corn, canning, 48, 51, 53, 54
 drying, 122-123, 127
 food value, 3
 salting, 97
 Corn sirup, 34, 61
 Crabapple Butter, 80
 Cherry Jelly, 67
 Jelly, 66
 Rhubarb Jelly, 67
 Crabapples, Spiced, 93
 Cranberries, canning, 26, 27, 32
 Cranberry-Orange Jelly, 68
 Quince Jelly, 67

Crocks, 94, 96
 Cucumber Pickles, Sour, 86
 Sweet, 86-87
 Currant Jelly, 66
 Red Raspberry Jelly, 67
 Strawberry Jelly, 67
 Cutlery, 7
 Cutter, kraut, 9

D

Dehydration, 109-128. *See* drying
 Dried Apricot-Pineapple Jam, 71
 Dried foods, how to cook, 125
 how to store, 128
 Drier, homemade, 112-114
 how to build, 112-113
 Dry pack, ix
 Drying, 6, 109-128
 fruits, 115-121, 126-127
 guide for, 126-127
 preparation of foods for, 115-124
 vegetables, 117-118, 121-124, 127
 Drying, cabinet, 111-114
 oven, 114
 sun, 111

E

Eggplant, food value, 3
 Equipment for food preservation,
 7-9
 Extraction of juice for jelly, 64-65

F

Figs, canning, 26, 29, 33
 drying, 119, 126
 Freezing, 6, 12, 129-131
 containers for, 131
 foods for, 130
 how done, 130
 Freezing lockers, 130
 Freezing units, 130
 Fruit Butters, 79-81
 Apricot, 80
 Cantaloupe-Plum, 81
 Crabapple, 80
 Grape, 80
 Old-Fashioned Apple, 81
 Peach, 80
 Pear, 80

- Plum, 80
- Steps in making, 79-80
- Fruit, canning, 21-37
 - preparation of, 27-31
 - processing time, 32-33
 - selection of, 25-27
 - steps in canning, 23-24
 - table of yield, 32
 - without sugar, 34, 60
- Fruit, drying, 115-121, 126-127
 - how to tell when done, 117, 126-127
 - preparation for, 115-117, 118-121
 - steaming, 115
 - sulphuring, 115-116
- Fruit juices, for beverages, 40-42
 - for jelly, 41
 - open kettle canning, 40
 - pasteurization, 40
 - water bath canning, 40
- Fruit press, 9
- Fruits, spiced, 93
- Funnel, 9

G

- Garden row storage, 105-106, 108
- Gauge, pressure cooker, 44, 46
- Gooseberries, canning, 26, 29, 33
- Gooseberry Jelly, 66
- Grape Butter, 80
 - Jelly, 66
 - Juice, 41
 - Peach Conserve, 72
 - Pear Jam, 70
- Grapefruit juice, canning of, 42
- Grapes, canning, 26
 - for juice, 41
- Green Tomato Pickle, 88
- Greens, canning, 48, 51, 53, 54
 - drying, 124, 127
 - food value, 2, 3
 - salting, 98

H

- Head space, ix
- Honey, 34, 61
- Horse-radish, 103
- Hot pack, ix, 23

J

- Jams, 69-71
 - Dried Apricot-Pineapple, 71
 - Grape-Pear, 70
 - Red Raspberry-Cherry, 70
 - Steps in making, 69
 - Tomato-Carrot, 71
- Jar lifter, 8, 24
- Jars, cooling, 14, 24
 - inspection, 16, 23
 - sealing, 10, 14, 18-19
 - sizes, 14, 33
 - sterilization, 19-20
 - storage, 14
 - washing, 19, 23, 45
- Jars, types, 14-19
 - commercial food, 14, 17, 19
 - glass top, 16, 19
 - glass top-seal, 16, 18
 - Mason with zinc top, 15-16, 18
 - vacuum-seal 16, 18, 19
- Jellies, 59-68
 - Apple, 66
 - Apple-Pineapple, 67
 - Blackberry, 66
 - Crabapple, 66
 - Crabapple-Cherry, 67
 - Crabapple-Rhubarb, 67
 - Cranberry-Orange, 68
 - Cranberry-Quince, 67
 - Currant, 66
 - Red Raspberry, 67
 - Strawberry, 67
 - Gooseberry, 66
 - Mint, 68
 - Plum, 67
 - Crabapple, 67
 - Quince, 67
 - Spiced, 68
 - standards, 62
 - steps in making, 64-65
 - sugar for, 60-61
- Jelly bag, 8, 60, 65
- Jelly glasses, 17
- Jelly test, 63-64
- Jelmeter, 63
- Juices, canning, 40-42

K

Kegs, 94
 Ketchup, 91
 Kettles, 7, 60
 Knives, 7
 Kohlrabi, food value, 3
 Kraut cutter, 9

L

Ladle, 8, 60
 Leaks, to test for, 24
 Lifter, jar, 8, 24
 Lockers, freezing, 129-130
 Long boil jelly method, 64-65
 Lye, for dipping prunes, 115, 121
 for sterilizing jars, 19

M

Marmalades, 73-75
 Carrot-Orange, 75
 Orange, 74
 Quince-Apple, 75
 steps in making, 73
 Three-Fruit Honey, 74
 Methods of storing food, 4-6
 Minerals, 3
 Mint-Cherry Preserves, 78
 Jelly, 68
 Molds, 10
 Mound storage, 104
 Mustard Pickles, 89

N

Nectarines, drying, 120, 126
 Non-acid vegetables, 6, 11, 43-58
 drying, 117-118, 121-124, 127
 preparation for canning, 49-52
 processing time for, 54-55
 selection for canning, 47-49
 steps in canning, 45-46
 table of yield, 53
 Nutrition, 2-4, 11-12

O

Okra, canning, 48, 51, 54
 drying, 123, 127
 Old-Fashioned Apple Butter, 81
 Onions, cellar storage, 102, 108
 food value, 3

Open kettle canning, 37
 Orange-Cranberry Jelly, 68
 Carrot Marmalade, 75
 Marmalade, 74
 Oven canning, 36-37
 Oven drying, 114

P

Paraffin, 65, 69, 73, 76, 82, 94, 97
 Parboil, x
 Parsnips, cellar storage, 102, 108
 food value, 3
 garden row storage, 105-106, 108
 pit storage, 103, 108
 Partial sealing of jars, 18-19
 Pasteurization, x, 40-42
 Peach Butter, 80
 Cantaloupe Conserve, 73
 Grape Conserve, 72
 Preserves, 77
 Peaches, canning, 26, 30, 32, 33
 drying, 120, 126
 food value, 3
 Spiced, 93
 Pear Butter, 80
 Preserves, 77
 Pears, canning, 27, 30, 32, 33
 cellar storage, 103
 drying, 120, 126
 Spiced, 93
 Peas, canning, 48, 51, 53, 54
 drying, 123, 127
 food value, 3
 Pectin, 62-65
 co. mercial, 62, 65
 natural, 62-63
 to test for, 63
 Pepper Relish, 90
 Peppers, drying, 123, 127
 food value, 3
 storage, 107
 Petcock, 23, 44, 45, 46, 118
 Piccalilli, 90
 Pickled Beets, 55, 87
 Pickles, 85-94
 Beet, 87
 Bread and Butter, 88-89
 Cherry Olives, 94
 French Green Tomato, 88

- Mixed Mustard, 89
 - Saccharine, 87
 - Sour Cucumber, 86
 - Sweet Cucumber, 86-87
 - Watermelon, 92-93
 - Pickling, 6, 85-98
 - Pineapple-Apple Jelly, 67
 - Pit storage, 103-105, 108
 - Plum Butter, 80
 - Cantaloupe Butter, 81
 - Jelly, 67
 - Plums, canning, 27, 31, 32, 33
 - drying, 120, 127
 - Potatoes, cellar storage, 102-108
 - food value, 3
 - pit storage, 108
 - Precooking, x
 - fruits, 23
 - vegetables, 45, 117
 - Preserves, 75-79
 - Apricot, 76
 - Cherry, 76
 - Cherry-Mint, 78
 - Golden Apple, 78
 - Peach, 77
 - Pear, 77
 - Quince, 77
 - steps in making, 76
 - Strawberry, 77
 - Tomato, 77
 - Preserving, 6, 59-84
 - Press, fruit, 9
 - Pressure canning, x
 - Pressure cooker, x, 5, 7, 23, 43-58
 - care of, 56-58
 - how it works, 56
 - how to can with, 44-46
 - use as a steamer, 118
 - use as a water bath canner, 23
 - Pressure saucepan, 53
 - Processing time, 14
 - definition, x
 - for fruit, 22, 32-33
 - for juices, 41-42
 - for vegetables, 46, 54-55
 - Prunes, drying, 121, 127
 - food value, 3
 - Pumpkin, canning, 48, 52, 54
 - cellar storage, 102-103, 108
 - drying, 124, 127
 - food value, 3
- Q
- Quince-Apple Marmalade, 75
 - Cranberry Jelly, 67
 - Jelly, 67
 - Preserves, 77
 - Quinces, canning, 27, 31, 33
- R
- Red Raspberry-Cherry Jam, 70
 - Currant Jelly, 67
 - Relishes, 90-92
 - Chili Sauce, 92
 - Chow Chow, 91
 - Ketchup, 91
 - Pepper Relish, 90
 - Piccalilli, 90
 - Rhubarb, canning, 27, 31, 32, 33
 - Rings, rubber, 14-16, 18, 19
 - Root vegetables, in boxes of sand, 102
 - in pit or mound, 105
 - Rubber rings, 14-16, 18, 19
- S
- Saccharine Pickles, 87
 - Safety valve (pressure cooker), 57-58
 - Salad vegetables, 2, 106-107
 - Salsify, cellar storage, 102, 108
 - garden row storage, 105, 108
 - pit storage, 103, 108
 - Salt as a preservative, 12, 94-97
 - in sugar sirups, 35
 - Salted Beans, 98
 - Corn, 97
 - Greens, 98
 - Salting, x, 6, 96-98
 - of vegetables, 96-98
 - how to cook salted vegetables, 98
 - steps in salting, 96-97
 - Sand, 102
 - Saucer test (for jelly), 64
 - Sauerkraut, 94-96
 - how to cook, 96
 - how to make, 94
 - how to store, 95
 - processing time, 55

- quick method, 95
 - Sealing of jars, x, 10, 14, 18-19
 - Sharp freezing, 130
 - Sheet test (for jelly), 63-64
 - Short boil jelly method, 65
 - Simmering, x
 - Soybeans, canning, 48, 50, 54
 - drying, 124, 127
 - Spiced fruits, 93
 - apricots, 93
 - Crabapples, 93
 - Peaches, 93
 - Pears, 93
 - Spiced Jelly, 68
 - Spinach, canning, 48, 51, 53-54
 - drying, 124, 127
 - Spoilage, 10-12, 14, 44, 58, 128
 - Squash, canning, 52, 54
 - cellar storage, 102-103, 108
 - drying, 124, 127
 - Steaming (in preparation for drying),
 - fruits, 115
 - vegetables, 118
 - Sterilization of jars, 19-20
 - Storage, barrel, 105
 - Storage, cellar, 6, 12, 100-103, 108
 - how to prepare, 101-102
 - vegetables for, 99-103, 108
 - ventilation of, 101
 - Storage, garden row, 6, 105-106, 108
 - Storage, pit or mound, 6, 103-105
 - how to prepare, 103-104
 - vegetables for, 103, 108
 - Storage of canned foods, 14
 - dried foods, 128
 - jellies, jams, etc., 82-83
 - winter vegetables, 99-108
 - Storage table, 108
 - Strawberries, 2
 - canning, 31, 33
 - Strawberry Preserves, 77
 - Rhubarb Conserve, 72
 - Sugar, as a preservative, 12
 - for canning, 34-35
 - for jams, jellies, etc., 60-61
 - Sugar sirups for canning, 35
 - Sugar substitutes, 34, 61
 - Sulphuring of fruits (for drying), 115-116
 - Sun drying, 111
 - Sweet potatoes, canning, 49, 52, 54
 - cellar storage, 102-103, 108
- T
- Tests, jelly, 63-64
 - leakage, 24
 - pectin, 63
 - Thermometer, 9, 102, 112, 113, 114
 - Three-Fruit Honey Marmalade, 74
 - Thrift tricks with fruits, 83-84
 - Tin cans, 17
 - Tomato-Carrot Jam, 71
 - Juice, 41
 - Preserves, 77
 - Tomatoes, 2, 4, 10-11, 38-39
 - canning whole, 39
 - hot pack canning, 38-39
 - storage of, 107
 - Tools for food preservation, 7-9
 - Turnips, cellar storage, 102, 108
 - drying, 124, 127
 - garden row storage, 106, 108
- V
- Vegetable soup mixtures, 52, 55
 - Vegetables, canning, 43-58
 - preparation of for canning, 49-52
 - processing time, 54-55
 - selection of for canning, 47-49
 - table of yield, 53
 - Vegetables, commercially canned, 11
 - Vegetables, drying, 117-118, 121-124, 127
 - how to tell when done, 118, 127
 - preparation for, 118, 121-124
 - steaming, 118
 - Vegetables, non-acid, *see* non-acid vegetables
- W
- Water bath canner, x, 7, 10, 22-24, 38-40
 - for vegetables, 54-55, 58
 - Watermelon Pickles, 92-93
- Z
- Zinc caps, 15

ABOUT THE AUTHOR

Elizabeth Beveridge is no canning theorist. Brought up on a Colorado farm more than a mile above sea level she began as a little girl to spend the summer helping her mother build the food reserve that was to carry the family through the long months of winter. She remembers one year when they did up 300 quarts of tomatoes as just one item in their food armory. Everything the big garden yielded was saved and what wasn't canned was dried or brined or stored away in pit and cellar. Even now when she goes home on her vacation she can't refrain, she says, from taking a hand in the preparation of the food that is to be sent into town to the freezing locker.

After she graduated from Colorado State College she taught home economics for five years in high school and then went east to Iowa State College where she specialized in household equipment. On receiving her master's degree in science she was appointed to the faculty, from which post she was called to take charge of the household management department of the Woman's Home Companion. Probably few women in the country are as well fitted by training and experience to write a book about the preservation of fruits and vegetables at home.

Credit is also due the food staff of the Companion for their generous contribution of treasured recipes for the jam and relish chapters. And finally acknowledgment must be made to the army of scientists and food specialists whose unceasing work in the laboratories of colleges and of government bureaus has made the preservation of food at home a safe and delightful enterprise for the homemaker.

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